

# Amateur Radio

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# Amateur Radio

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Peter Parker VK3YE



### This month's cover

Our cover this month shows the station set  
up by Andrew VK1AD/3 on Mount Hotham:  
an inverted V dipole and a 10 m vertical with  
ground plane. Andrew is seated and attempting  
to work a SOTA station in OE. Watching is Adan  
VK1FJAW/3. Others were enjoying drinks and  
nibbles nearby, with low cloud rolling across the  
ridges from the south. Read about the gathering  
of SOTA operators in the SOTA and Parks  
column. Photo by Peter Freeman VK3PF.

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## Contributions to Amateur Radio



Amateur Radio is a forum for  
WIA members' amateur radio  
experiments, experiences,  
opinions and news. Manuscripts  
with drawings and/or photos are  
welcome and will be considered  
for publication. Articles attached to  
email are especially welcome. The  
WIA cannot be responsible for loss or damage to any material.  
Information on house style is available from the Editor.

### Back Issues

Back issues are available directly from the WIA National Office  
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### Photostat copies

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### Disclaimer

The opinions expressed in this publication do not necessarily  
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A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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## Editorial

Peter Freeman VK3PF

### Face to face contacts

Our hobby is fundamentally about communication. Most of us communicate on-air regularly, regardless of the mode used during transmission. It is interesting to note that many (most?) of us enjoy the opportunities to make face to face contacts. Be it the monthly radio club meeting when it can be difficult to bring those gathered to order to commence proceedings, or attending a "Hamfest" event, where looking at items to possibly purchase can often be secondary to catching up with other amateurs in person.

I attended two SOTA related events in February: the VK3 SOTA Conference at Moorabbin & District Radio Club Inc. and the informally organised SOTA gathering at Mount Hotham. There are brief accounts of both events in this month's SOTA and Parks column. At both events, lots of ideas and experiences were shared.

I also travelled to the EMDRC Hamfest later in the month. Circumstances this year forced the host club to move the event to a date which clashed with the annual Wyong event hosted by CCARC. I have read some accounts of both events and each seemed to have its own success. At the EMDRC event, we were able to see the new IC-7300 on display but without any antenna connected. It certainly looked interesting. There is much discussion occurring about the new radio, including some very animated expressions of opinions regarding features, selling price and likely delivery dates. I understand that the first delivery is likely to occur in Australia in late March or early April, perhaps soon after this issue is available.

At the Hamfest, I did spend a lot of time catching up with many amateurs who I have not seen for some time. A large variety of topics were discussed.

It is great to interact on the closer terms permitted by face to face encounters, where many more aspects of communication are experienced than can be conveyed via radio waves: in particular, body language and facial expressions.

For me, February finished with a less pleasant opportunity for face to face contact: I was able to attend the funeral service for long-term friend Doug VK3UM. Since his departure, many amateurs have expressed their respect and admiration for Doug and his achievements over the years. I have received three SK notices already! One of those is included in this issue. As Convenor of the annual GippsTech event, I know that this year's conference will be very different without Doug's presence in person. Doug was a regular attendee and contributor to the event since it began in 1998. He will be missed.

### Moving forward

Structural change in the WIA Office is hopefully nearing its conclusion, with the Executive Administrator role having been filled. I met Bruce at the March Publications Committee meeting. I am sure that he is working hard to come up to speed with the new role. This month's Comment outlines some of the challenges that have confronted the Board. I am sure that the Board members will be working hard to

Continued on page 5





## WIA comment

Phil Wait VK2ASD

### Life as a WIA Director was never meant to be easy

Italian philosopher, Niccolò Machiavelli, made some sage observations about change and reform: *"There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things"*. It would be fair to say that last year was difficult for the WIA, with an office restructure, the appointment of a new Executive Administrator, the resignation of one Director, and the resignation of two Treasurers, one after a very short term. Last year, life as a WIA Director was never going to be easy.

In this issue, you will see a Letter to the Editor from Chris Chapman VK3QB. Chris raises a number of issues in his letter concerning governance and financial practices at the WIA. The Board is addressing several issues Chris has raised, including instigating a full review of the WIA corporate governance and procedures. I refer readers to the WIA's reply.

A couple of days after Chris resigned, I attended a meeting at the WIA office with Fred Swainston, our new Executive Administrator Bruce Deefholts, our accountant Murray Leadbetter, and the WIA's Auditor to get to the bottom of the financial concerns.

We spent several hours analysing the accounting system and the financial records and determined that the WIA did not appear to have any major accounting issues. Accounting processes and record keeping has been very much improved in the last few months, and major problems with the WIA's upcoming annual financial review are not anticipated.

On the information available at the time of writing, it seems the WIA has no major financial issues. We expect the Auditor's review to go smoothly and the financial result for 2015 will be available after that.

Governance issues like those raised in Chris' Letter to the Editor are now extremely important, much more so than a few years ago. The WIA continues to function on the goodwill and considerable time and effort put-in by volunteers, but all Directors and Officers of the WIA now carry a considerable burden.

Our society is a very different place in 2016 to what it was in, say, the 1980s and 1990s. An organisation now has to devote a great deal of attention to process and, sometimes, achieving the actual outcome seems secondary. I guess that is just symptomatic of our increasingly legalistic society.

Under the WIA's Constitution, WIA members are elected to the Board of Directors by popular vote. There are no qualifications required, and I think it would be fair to say that most WIA volunteers have not had a great deal of experience with corporate governance issues. I am an outcomes driven person myself, and I do tend to focus on the end result. To improve that situation I have directed all WIA Directors to attend a short course on corporate governance issues (myself included).

This begs the question: why would anybody want to become an Officer of a volunteer organisation these days anyway? I must admit I'm asking myself that same question right now. However, I am very much encouraged by the number of people who have put up

their hands this year to be a WIA Director – I might get to have a holiday after all!

### Issues affecting us all

On a totally different issue, last month, in March, the WIA made a submission to an ACMA discussion paper about in-home BPL/PLT modems. These are the power-line modems that can be purchased from retail outlets, or supplied with a broadband entertainment service. The supply and operation of these devices is largely managed under the ACMA's electromagnetic compatibility (EMC) requirements. Up to now, the ACMA has required compliance to the International Standard CISPR-22.

The development of specific EMC requirements for in-home BPL/PLT technology has been highly contentious and, despite extensive work over many years, agreement has not been reached anywhere in the world. Australia, through Standards Australia technical committee TE-003, of which the WIA is a member, has consistently opposed the inclusion of BPL/PLT-specific requirements in CISPR 22.

As a result of the unsuccessful attempt by CISPR to amend CISPR-22 to introduce specific limits for BPL/PLT equipment, the European Standards organisation CENELEC has developed an alternative standard, EN50561-1, which is more accommodating. The limits in EN50561-1 are the same as CISPR 22, but because it classes the modem as a telecommunications device, and the modem is not required to be in

Continued on page 5



## WIA logo for affiliated clubs

A specially designed WIA logo is available for

use on WIA Affiliated Club websites. The WIA logo is the copyright corporate logo of the Wireless Institute of Australia. Use of the WIA logo in any form of printed, electronic or online medium requires the written permission of the WIA Board. Other uses of the WIA logo by individuals, clubs or commercial organisations may be possible. The WIA grants pre-approval for use of the special 'WIA Affiliated Club' logo on the home-page of WIA Affiliated Club websites.

Earlier, members were given conditional pre-approval to use the WIA logo on their QSL cards. Both the 'WIA Affiliated Club' logo, only for club websites, and the member WIA logo for QSL cards, along with their individual use conditions, may be found on the WIA website.

## The ACMA licence renewal process - explained

The Australian Communications and Media Authority sends a renewal notice to the postal address the licensee has recorded, about two weeks before the licence is due to expire. The responsibility rests with the licensee to keep the postal address up to date, and pay the licence fee by the due date.

The ACMA said that postal address or email contact change details need to be made in a timely manner so the renewal notice can go to the current address. If a renewal notice is not received in the month leading up to the expiry date, request one by contacting the ACMA Customer Service Centre on 1300 850 115 or [info@acma.gov.au](mailto:info@acma.gov.au)

Technically at midnight Canberra time on the expiry date, the station

is unlicensed. However, a small window of opportunity exists up to 60 days when the licensee can renew a licence by paying the licence fee without penalty. The ACMA will cancel your callsign if it doesn't receive a response to your renewal invoice within a limited time after the expiry date. The ACMA will lapse the licence, and your callsign will then be available for re-issue. The callsign automatically appears on the WIA-administered publically available callsign list, or be subject to a ballot process in some cases of two-letter callsigns.

A few people try to get their licence back after it has expired, but are told by ACMA to apply for a callsign through the WIA Office to re-start the process. This means that the WIA needs to make a callsign recommendation and submit this to ACMA with a licence application, to enable a new licence to be issued. However this is not always under the previous callsign, because as we have explained, it may have already been issued to someone else.

The answer is to always know your ACMA Amateur Licence renewal date, whether or not you receive formal renewal, and make sure you renew it to keep the callsign. ACMA's Amateur licensing process relies on you keeping your contact details current with their office. In respect of licence certificates, the ACMA no longer posts out a new certificate. Instead it has a PDF and any other licence condition downloadable in the public register details on the ACMA website.

In correspondence and invoicing the ACMA only uses the Client and Licence numbers.

If you want to check the callsign to which it refers, then this is obtained from the ACMA public register on its website. These changes under the Spectra

system that began late last year are being progressively put in place at the time at the next renewal of a licence.

This is not just for the Amateur Service, but for all licensees. These changes have saved the ACMA money and this has been reflected in the new lower licence fee structure.

## New appointments in the WIA office

The WIA Board of Directors has appointed a new Executive Administrator for its office in the Melbourne suburb of Bayswater. The successful candidate is Bruce Deefholts, who comes to the WIA from the corporate sector, but with some not-for-profit experience. His new full-time contract position answers to the WIA Board through the President.

Bruce will also become the WIA Company Secretary organising and attending WIA Board meetings. The WIA has also appointed Petra as the new Examination Officer. Petra has served in that role for some time as an agency temporary and has now accepted a full time position with the WIA. We are very pleased to have Petra on board. A professional analysis of the WIAs existing processes and future requirements was carried out in 2015, and the Board decided to replace the position of Office Manager with the new position of Executive Administrator.

Meantime, the WIA office underwent a top-to-bottom review to reflect the wishes of members, and to better face an environment of regulatory change for spectrum users and the prospect of some further government outsourcing. The end result includes emphasis on customer service, delivery of member services, office function streamlining, banking and finances. Obviously Bruce will take some time



to settle into his new role, so if you have a query of the WIA could you please refer to the Frequently Asked Questions section on the WIA website first, before contacting the WIA Office.

### **Wanted! New recruits across the entire demographic**

The Wireless Institute of Australia continues to seek recruits to amateur radio and its diverse activities across a broad range of ages and backgrounds. Recently, the 'Bring them Back' concept was raised by the WIA in response to

the fact that lapsed radio amateurs, with a little encouragement, may return to the modern amateur radio, which offers so much more diversity than in the past. This follows a small avalanche of callsign recommendations being sought from the WIA over recent months by former licensees returning to the hobby.

These already-qualified people are an important part of the recruitment mix. The revival of 'lapsed' radio amateurs is an activity to keep in mind whenever the opportunity exists. However, the WIA and all

those concerned with growing the ranks of radio amateurs, seek recruits across a very wide age range. This includes young people, adults, the employed or retirees, all of whom could make good, new radio amateurs.

Some recent examples include publicity across the Men's Shed movement, in RSL newsletters, through community groups like Rotary and Lions, among the Grey Nomads touring their bucket list destinations, as well as through schools and professional associations.



## **WIA** comment

Continued from page 3

active mode when testing emissions on the mains connection (they may as well test a toaster). However, EN50561-1 does require 'notching' of the transmitted signal to protect various radiocommunications services including amateur, aeronautical and broadcasting.

The ACMA recently undertook an audit of suppliers of BPL/PLT devices in Australia and assessed that there is a systemic non-compliance issue, they say, caused by confusion about the application of the Standards.

However, despite the widespread noncompliance of equipment they report "in practice, the associated interference risk has not materialised" and "to date, the ACMA has not received any

complaints regarding interference to radiocommunications services from PLT devices". The ACMA has now implemented an interim approach to allow the continued supply of in-home PLT devices, while attempting to manage the interference and any consumer risks. A longer-term decision is expected to be made by the ACMA by the end of June.

The introduction of transmission masks that notch the amateur bands have no doubt reduced the interference experienced by radio amateurs. However, we are surprised about the apparent lack of interference complaints about BPL/PLT devices from Australian radio amateurs. Could it be due to the difficulties identifying and finding the source of BPL/PLT interference,

is the interference reporting process through the ACMA website too difficult, has a complaint about BPL/PLT interference received no attention or, as some contest, is there simply no problem?

Let's call it for what it is – Electromagnetic Pollution, where every unwanted noise source just adds to the pollution level. It is the WIA's view that, in order to protect existing and emerging technologies, we must maintain the strongest vigilance against radio noise pollution from all identifiable sources. If you do have a confirmed case of interference from a BPL/PLT modem, and if you have subsequently lodged an interference complaint with the ACMA, we could be pleased to hear from you.



## **Editorial**

Continued from page 2

progress the changes within the organisation. In addition, we have a Board election in progress, so we may see additional changes following the Annual General Meeting...

### **Farewell**

At the March Publications Committee (Pub Com) meeting, the

resignation of Evan Jarman VK3ANI was announced. Evan has served on Pub Com since September 1978. His major role has been as a member of the technical editorial team, and he filled in as Acting Secretary following the departure of Ernie Walls VK3FM until Kaye VK3FKDW joined us. As was noted last night, his service has been

"longer than two life sentences".

Many thanks for your contributions Evan. I trust that your travel plans come to fruition.

Until next month,  
Cheers,  
Peter VK3PF



# Review of the GAP Titan II or Filling a GAP in antenna experiences

Peter McAdam VK2EVB

Well back in 2010 it eventually happened as I had expected it would: My old faithful, sloping multi-band dipole fell out of the gum tree after the support rope rotted. I rolled it up to put away as I decided that climbing the tree to re-install a new pulley and rope was beyond me at that stage. So I removed my old 5-band trapped vertical from mothballs, and re-installed it to get me back on PSK31 again. Of course I noticed a rise in noise level which one expects with this type of antenna but the increase in received signal strength from DX stations was very promising. After working quite a few DX stations over a couple of weeks the idea of a new, easily maintained, single support, vertical antenna was beginning to become attractive. This caused me to re-assess my operating practices and needs to the point where I decided that the loss of NVIS or high angle radiation on 80 and 40 metres would not affect me significantly (Ha ha!).

I decided that coverage of 80 to 10 metres including the WARC bands would be a pre-requisite and in view of the environment at the home QTH, an elevated position with a radial system would be required. So on to the World Wide Web I went, looking at designs, reviews, sizes and radial requirements etc. Of course a headache ensued as my head spinning with information overload symptoms. I was intrigued by the GAP antennas with their elevated feed point which supposedly improved radiation, by lowering losses and no radials. After a fortnight of sorting out interesting snippets of information, features, performance reviews etc., I decided



Photo 1: The package ready to be opened.

to ask the chaps at GAP Antenna Product Inc. in the USA a couple of questions via email about the GAP Titan DX antenna. The lack of radial systems was the main theme, especially the effect on radiation patterns and efficiency. The reply was quick with straight answers to my questions in easy to understand language. I applied the information to my favourite antenna design software, "MMANA", which showed me similar results to those quoted, well, the theory looked good anyway.

A week later I rang the then GAP Antenna recommended Australian agent, ATRC (since closed) and place my order. I spoke with Les who was very friendly and helpful, suggesting that my package would arrive within a week. He was spot on and it arrived Friday (20/08/2010) at lunch time ready for the weekend. Well packaged in a heavy cardboard box, it had survived the trip from the US and was in perfect condition. One section of the aerial came pre-assembled but many sections of tubing had to be added to complete the construction. A Nut Driver tool was included and a 14 page instruction manual which I read

during the evening. The handbook described the steps in order after a safety warning and suggestions on antenna placement for best performance.

The next morning, Saturday, I got all basic chores out of the way quickly so I could start assembly. The graphic checklist was completed and all parts found to be present. All tubing sections were pre-drilled to accept the stainless steel screws and star washers. The radiators consist of high quality aluminium tubing, and the lower section being nested tubing (one tube inside the other) to provide strength. The 80 metre coaxial stub was already inserted in the top radiator (main section) at the factory so I only had to install the tuning capacitor, slide it inside the top section, secure it to the top of the radiator with a stainless screw and snap the top cap (dust cover) into position. The standoff supports for the tuning rods are already fitted to the top, main, mid and lower sections so only require the stainless clamps loosening with a screw driver so they can be correctly orientated. No difficulty was found and everything fitted





Photo 2: Commencing assembly of the antenna.

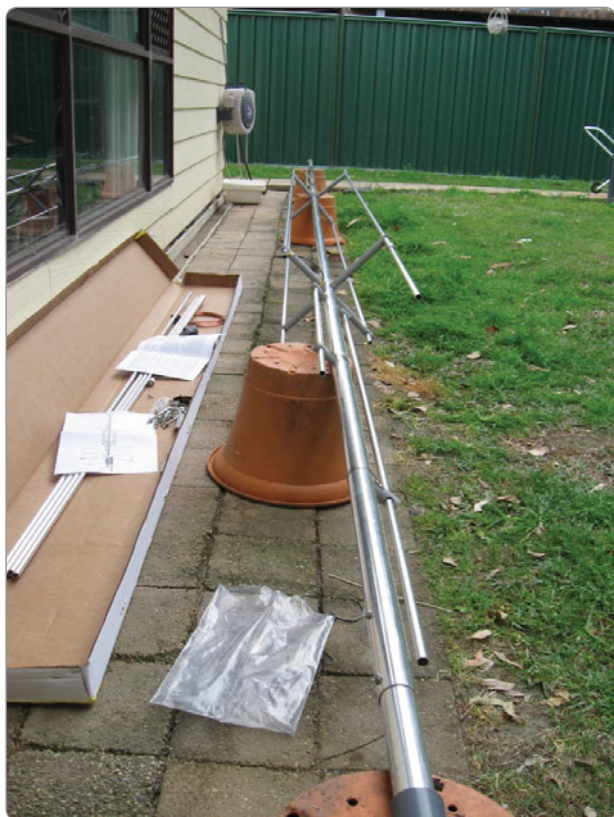


Photo 3: Assembly is progressing well.

as described. Following the steps in the handbook, I had the antenna together with the exception of the counterpoise in about two hours. I found it rather straight forward, which was very pleasing.

I took a lunch break at this stage and continued again after an hour. Using ladders and the clothes line to support the antenna (rather heavy now assembled), I fitted it to a tilt over mast I had already built for the purpose at the back of our house. Up it went without a hitch ready to have the counterpoise system installed.

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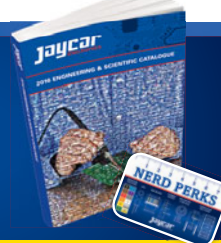
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After an hour it was all secured with non-inductive, Dacron guy wires and ready for testing. The SWR looked good on most bands straight off and a bit of adjustment of the 40 metre tuning section tweaked it to a 7.15 MHz centre frequency. Now it covered the complete 40 metre band rising to a 1.8 to 1 SWR at the band edges. Signals were roaring in but still I persisted to check out the other bands. The coverage of 80 metres was centred on 3.6 MHz as per the capacitor I had requested and showed about 60 kHz of usable bandwidth either side. The SWR on the low end of 20 metres was a bit high but I found I had placed the counterpoise in the wrong position with a cross-arm too close to the



Photo 4: The antenna in the air ready for initial testing.

14 MHz stub so that was an easy fix. I suspected 30 metre operation was detuned by the proximity of my roof tower and a slight rotation of the GAP vertical radiator confirmed this when the SWR changed. Using my trusty VK5 Antenna Analyser I found 30 metre resonance at 9.9 MHz which I directly attributed to the detuning effect. When I lowered the tilt-over roof mast, the 30 metre SWR immediately dropped to correct readings, so obviously that was a little problem of my own creation. The other bands were all as specified and I was rather pleased with my efforts and the way unusual design responded. It was noticeably quieter than my old trapped vertical, so that was a plus too.

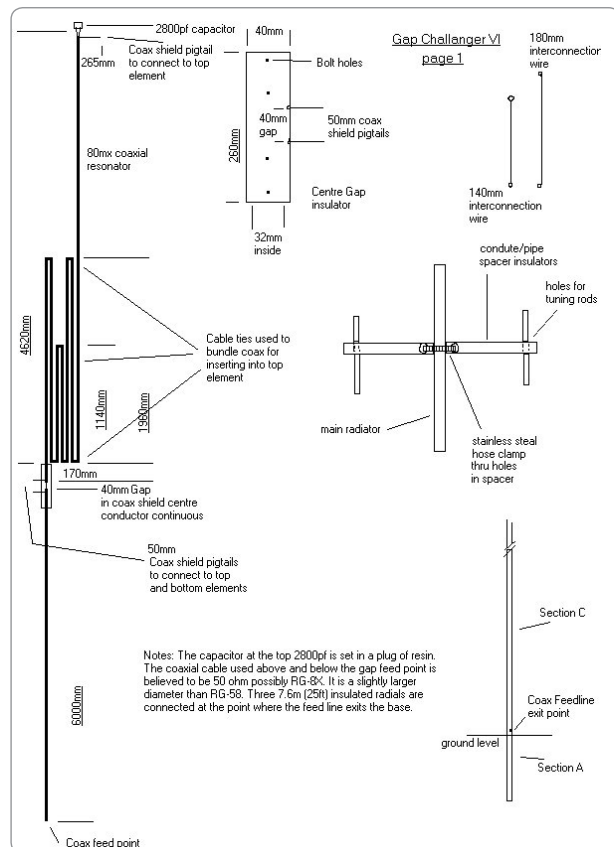


Figure 1: The Gap Challenger assembly instruction sheet (Page 1).

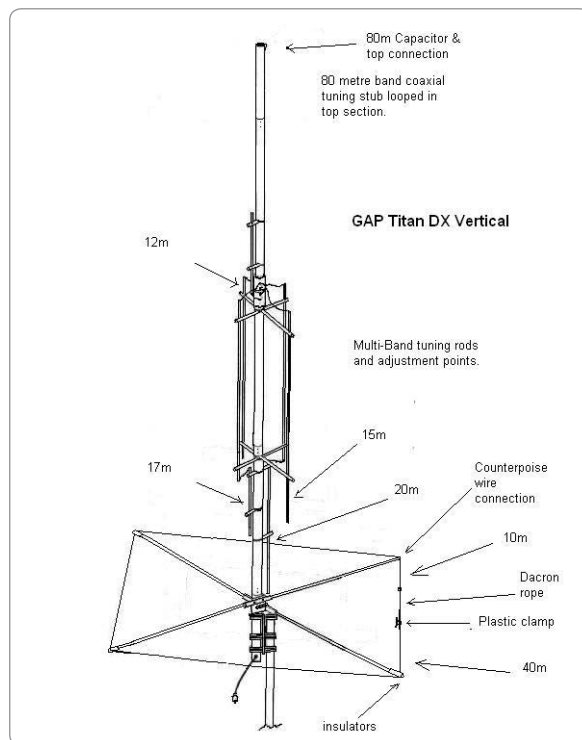


Figure 2: Diagram of the complete antenna.



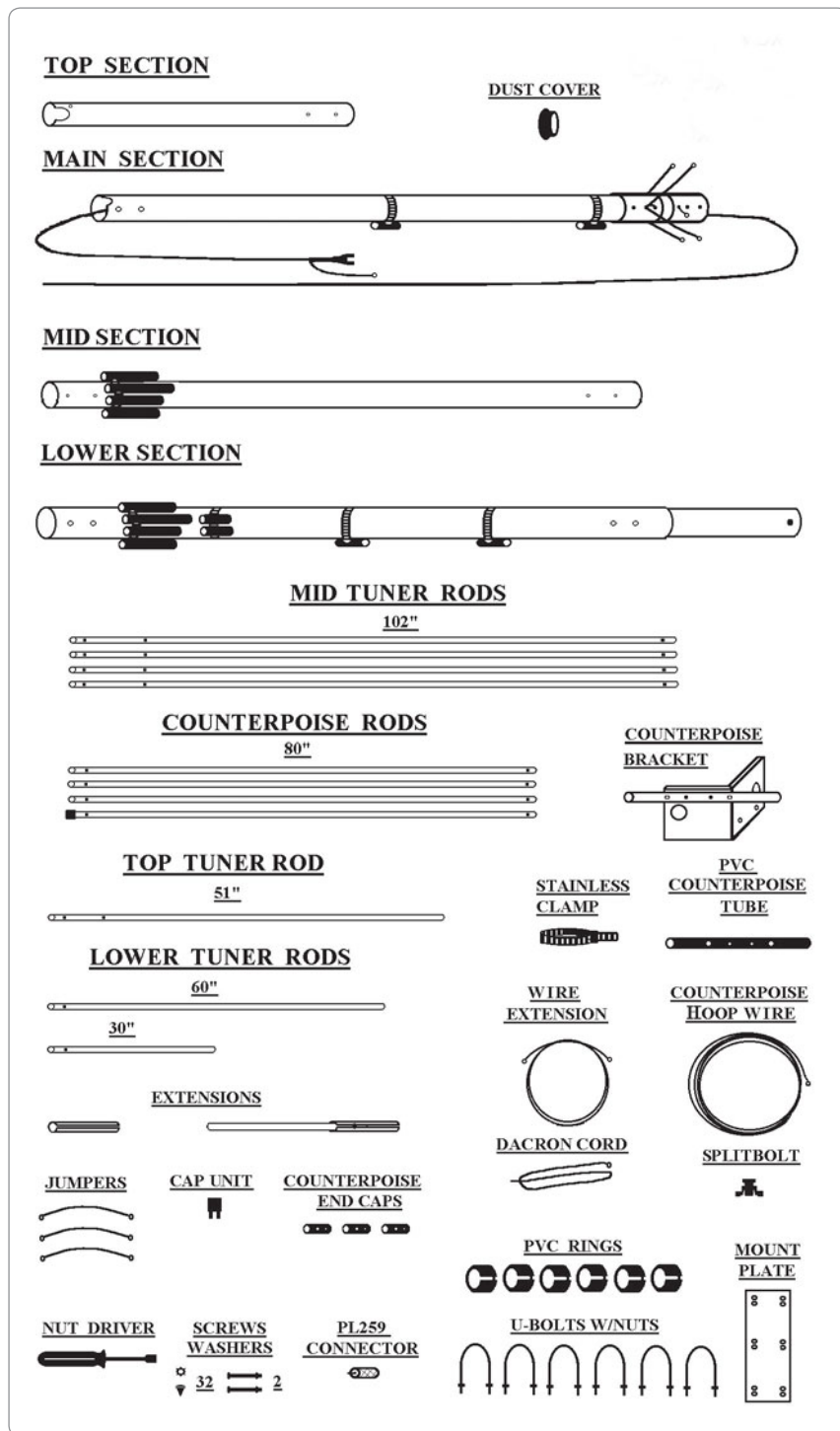


Figure 3: The complete Parts list.

My first contact was with a Light House Station VK3ATX portable at Gabo Island on 7.1 MHz with good solid 59+ reports both ways. (Sunday morning at 2350 UTC 21/8/2010) I was really getting excited by now so tried a few other bands and contacted many stations with success. It was so easy to change bands without retuning an ATU and performance appeared excellent so I was very pleased. A call in to VK2WI Dural after the WIA Sunday morning broadcast on 5 watts QRP from my FT-817ND yielded yet another good report. I then tried some PSK31 and worked K7VIC and KH6SAT on 14.070 MHz so the promise of much more DX made the money seem well spent.

In the years since, I have used it mainly for DX PSK31 and HF D-STAR contacts. I find it useful for a variety of amateur interests including as a 29.450 MHz downlink antenna for amateur satellite AO-07 on Mode A in combination with a tracking Yagi array. I have since managed to erect a horizontal multiband antenna for NVIS type local HF communication (the antenna I would never need again!) but the GAP is my DX antenna, even on 80 metres PSK31.

Looking at the design, I can see a likeness to a vertical OCF dipole on 40 metres and some other bands. I presume it works on the third harmonics to gain coverage in other ranges with a coaxial stub and capacitor to resonate the antenna to the 80 metre band. See the diagram of the GAP "Challenger" 80 metre stub and feed point to gain an idea of the internals. It is big compared to a trapped vertical, looks a bit ungainly and rather unusual but all I know is it works.

AR

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# Length matters: fun with coaxial cable

Peter Parker VK3YE

You arrive at a country park to do some portable operating but find the space taken by local bumpkins running a custard pie throwing competition. Initially despondent, you watch and find that the event teaches rather a lot about feedlines and antennas, thanks to its rather strange rules.

The pies are for later consumption. The main course, which many amateurs skip, must come first. Transmission line theory is like an old-fashioned school lunch: as has been sung, *"If you don't eat your meat you can't have any pudding"*.

Feedline length isn't important where the antenna's feedpoint impedance is near 50 ohms on all desired frequencies. The correct length to use is the distance from the antenna to the transceiver. Provided the cable's loss is acceptably low on the bands used no further thought is needed.

However at other times length does matter. Certain cable lengths have interesting characteristics. Cable can be used to transform impedance or make RF filters. Knowledge of cable's characteristics can be useful for troubleshooting or estimating its length, even if you don't have access to the other end. None of this is new but if, like me, you skimmed the 'boring' transmission line sections of the amateur handbooks, it's worth a recap.

## Electrical lengths

We often buy coaxial cable by the metre (or hundred). Loss calculations are done the same way, calculated per hundred metres or part thereof. But, otherwise the critical factor is the cable's **electrical** length relative to wavelength (and thus operating frequency).



Photo 1: Broadband RF noise generator.

Note the highlight. A cable's electrical length is always shorter than its physical length. The difference is because RF signals travel slower through a feedline than they do through a vacuum.

## Properties of certain electrical lengths

As we'll shortly have the means to prove, feedline is frequency

sensitive. Certain lengths have interesting properties, depending on frequency. It would be extraordinary if this wasn't so; all feedlines contain resistance, capacitance and inductance, with the effect of the latter two varying with frequency.

As an example, an electrical quarter wavelength of cable with its far end left open remains an open circuit if tested at DC with a

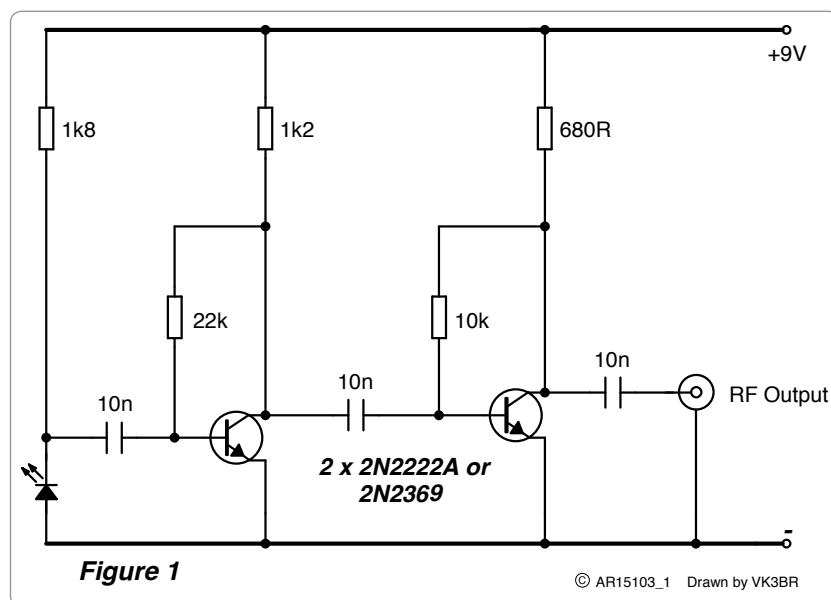


Figure 1: Circuit diagram of broadband RF noise generator.



multimeter but appears shorted to RF of certain frequencies. In contrast shorting the far end closes the circuit as far as DC is concerned, but makes it appear open for RF.

An electrical half wavelength of cable can also be made to short RF but, opposite to the quarter wavelength, requires its far end to be shorted. Some uses for these characteristics are given later.

## Velocity Factor

Before we mentioned that RF signals travelled slower through cable than they do in open air. The ratio between in-cable and through-space speed varies between feedline types and is referred to as the velocity factor. Common values are around 0.66 for coaxial cable and 0.95 for open wire feedline. Like decibels, the velocity factor is a ratio with no unit. A cable's velocity factor of 0.66 (or 66%) means that signals through it travel at about two thirds the speed they would in free space.

Does this matter? It depends. The delay is too small to notice on air. The amateur down the road with the open wire feeder won't snatch the rare DX faster because the signal travelled faster in his feedline than your coax. But knowing the velocity factor allows the cable to be cut to its correct electrical dimension. This is vital when relying on the cable to provide an accurate impedance transformation or phase shift at a particular frequency, as needed with some antenna projects.

Luckily these calculations are not hard. The first item needed is a general coverage HF receiver or transceiver with signal strength indication. A sensitive software defined radio with spectrum display will also work.

Secondly you need a broadband RF signal generator. It puts out a constant level of 'hash' over the radio spectrum. They're about the simplest radio project you can build and use a few dollars' worth of parts.

Thirdly you need a coaxial T piece which is basically just three sockets in parallel. Make one from three panel mount SO239 sockets if you don't have one. Use short wire offcuts to solder the inners to each other and the outer frames to each other.

## A Broadband RF Noise Generator

Photo 1 and Figure 1 show the broadband RF noise generator. The circuit, which was described by N5ESE, is a little simpler than other generators because it only has two stages, not three. All parts are readily available and it should take less than an hour to build. Building one is good training, especially if you've never assembled anything from a circuit diagram before.

The generator works because a small amount of RF noise is produced when DC is passed through a zener diode or LED. The two transistors amplify it to a usable level. Broadband RF noise sources such as these are used in more advanced pieces of test equipment such as noise bridges used for antenna measurements.

A printed circuit board is overkill for such a simple project. Instead mount the parts on matrix board (3 x 4 cm should be sufficient) or dead-bug style on unetched printed circuit board. All the ground connections go the circuit board and the metal case, which is necessary for RF shielding. A mints tin is ideal, and, if you cram the parts in tight enough, might even be able to hold the nine volt battery as well. Add a BNC socket for the RF output connection – the mints tin should be just wide enough to take it.

The transistors, LED and power connections are the only polarised parts. When satisfied they're wired correctly apply 9 volts and watch the LED come on. Then connect the output directly to the HF receiver's antenna socket. If it's working the receiver's S-meter should go from zero (with the battery disconnected)

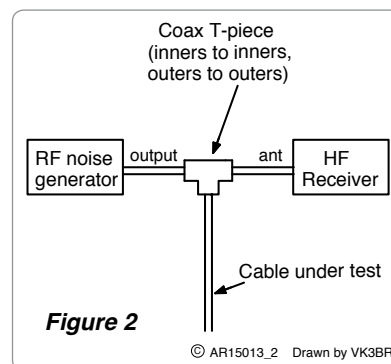


Figure 2: Measuring velocity factor or testing filters.

to S9 with the battery connected. The S-meter reading should be fairly similar across the whole HF spectrum – proof that the noise generator is working.

## Measurements with a Quarter Wavelength Cable Open at End

Once satisfied its working, connect your T-piece so that the arrangement looks like Figure 2. With nothing on the unused socket the noise generator should be audible as before.

Plug a piece of 50 ohm coaxial cable of about 5 to 20 metres long into the spare socket and tune around on the receiver. Leave its other end free. Set a fast tuning rate with big steps so you can cover several megahertz in a few seconds. From about 2 MHz tune up in frequency and note the reading on the S-meter with the noise generator on. It will initially be fairly constant but you'll find a spot where the meter goes down to nothing. Keep tuning and the signal will rise again.

What you observed is the coaxial cable acting as a band reject (or 'notch') filter at that frequency. Signals are shorted to earth so they hardly show on the receiver. Whereas at a megahertz or two either side the cable has no effect. This peculiar behaviour (occurring when the cable is exactly an electrical quarter wavelength at that frequency) is due to the signal being cancelled out by waves being

reflected from the unmatched and unterminated far end of the cable.

Write down the frequency where you got least signal strength and keep tuning up towards 30 MHz or more. You'll find other nulls where the noise drops to nothing. These will be at odd multiples of where you got your first null.

For example if the first null was at 3 MHz, higher nulls should be at about 9, 15 and 21 MHz etc. In this case the cable is  $3/4$ ,  $5/4$  and  $7/4$  wavelengths long respectively; with behaviour similar to if it was a quarter wave, as on 3 MHz. It's worth knowing this in cases where you need the electrical properties of a quarter wavelength of coaxial cable but need it to be a longer length, for instance in some antenna projects.

### Measurements with a half wavelength cable shorted at the end

Here's another trick. With the same setup as before, temporarily short circuit the inner to the braid at the free end of the cable. Switch on the noise generator and find where the nulls are. They'll be at different frequencies – actually double the ones we had before. Because doubled frequencies mean halved wavelengths, the cable will become an electrical half wave at the lowest frequency and multiples thereof on higher frequencies: expressed another way, an even number of quarter waves.

This works because a half wavelength of transmission line makes no transformation of the impedance encountered at its far end. In this case it's a dead short as far as both DC and RF is concerned, and this remains so every half wavelength along the line.

The same principles of open and shorted transmission line behaviour apply for sound as well as radio waves. A small speaker and scraps of PVC pipe makes an interesting experiment and useful CW audio filter. The filter's resonant frequency depends on the pipe's length. And

just like with the coaxial cable test there will be a difference in its resonant frequency depending on whether the free end of the pipe is open or closed. Construction details for such filters are readily available on the web.

### Uses for notch filters

Getting back to RF, where would you need a coaxial cable quarter or half wave notch filter?

One example is if your television is being overloaded by a strong fundamental signal from your transmissions on (say) 144 MHz. In that case you could install a 144 MHz notch filter, made from an electrical quarter wavelength of 75 ohm coaxial cable, in the TV's antenna line. This rejects your signal while allowing TV signals to pass provided the stations are not on an odd harmonic of 144 MHz. If they are then a shorted half wavelength cable could work better as its harmonic notches are at different frequencies.

Another application is at a club contest station where multiple frequencies are used simultaneously. Reception on 14 MHz may be overloaded by the 7 MHz transmitter and you've established that it's not due to transmitter harmonics. A possible solution could be to add an electrical quarter wavelength of coaxial cable (for 7 MHz) across the antenna line of the 14 MHz transceiver. That should reject 7 MHz signals while not affecting 14 MHz operation.

The harmonic relationship of many HF amateur bands can help. If 21 MHz also causes problems then the same 7 MHz filter should help since it's an electrical  $3/4$  wavelength on 21 MHz. Or if you wanted to reject 14 or 28 MHz signals then shorting the free end will make it a half wavelength transmission line filter on 14 MHz and a two half wavelength filter for 28 MHz.

A pi network in the antenna line is the most effective harmonic filter

for a transmitter. This is because it attenuates everything above its design frequency by a consistently high amount. But if for some reason one wasn't available then a shorted half wavelength coaxial cable stub (tuned for double the transmit frequency) across the antenna socket may offer relief on harmonics that are even multiples of the fundamental. Unfortunately, unlike the pi-network, it is ineffective for odd multiples of the fundamental.

You need to know the cable's velocity factor to build effective filters of this type. Fortunately this is easily calculated from its lowest frequency notch (3 MHz in the above example) and its measured physical length.

A full wavelength is the speed of light divided by the frequency. For our purposes we can simplify this to  $300 / \text{frequency in MHz}$ . That's 100 metres for 3 MHz. 25 metres is a quarter wavelength.

Now measure the coaxial cable's actual length. I got 16 metres. That's an electrical quarter wavelength at 3 MHz (or 100 metres wavelength), which as we mentioned before is shorter than the physical quarter wavelength.

The cable's velocity factor is simply the cable's actual length divided by the frequency's quarter wavelength. That's 16 metres / 25 metres or 0.64 (sometimes written as 64%) which is not far from the often-quoted 66% for coaxial cable.

Knowing your cable's velocity factor makes it easy to cut electrical quarter and half wavelengths sections of it.

Simply divide 300 by the target frequency to get its wavelength.

Divide that number by 4 to get a quarter wavelength.

Then multiply this result by the velocity factor to get an electrical quarter wavelength and cut the cable accordingly.

### Impedance transformation

Electrical quarter wavelengths of cable are useful for more things than notch filters.

Unlike an electrical half wavelength of cable, an electrical quarter wavelength of line can transform impedances. Because certain antennas are not always the same impedance as your 50 ohm feedline and transceiver, some transformation is desirable. An example is the full wavelength quad loop which may have an impedance of around 100 ohms. It's a good antenna but you might not like the 2:1 mismatch.

A common method of matching loop antennas to 50 ohms is to use an electrical quarter wavelength of 75 ohm coaxial cable between the antenna and the regular 50 ohm line. This works because the 75 ohms is near the midpoint of the impedances to be matched – in this case 50 and 100 ohms. Technically the 'midpoint' should be a geometric mean; i.e. the same ratio exists between 50 ohms and the cable impedance as between the cable impedance and 100 ohms. It's not in this case (70 ohms would be closer) but the difference is small enough to ignore.

*(Editor's Note: the matching section impedance ( $Z_m$ ) can be calculated from the equation:  $Z_m^2 = Z_0 * Z_L$ , where  $Z_0$  is the impedance of the (main) transmission line (i.e. the transmitter load impedance, typically 50 ohms), and  $Z_L$  is the load or antenna impedance. So the "perfect impedance of the matching section in this case would be 70.1 ohms.)*

What about if you wanted to transform to impedances lower than 50 ohms? That might be useful for some beam antenna designs because adding elements lowers impedance. This would appear impossible at first glance due to the unavailability of coaxial cable that's less than 50 ohms. The solution is to use two quarter wavelength matching sections in parallel to halve the impedance. A 2 x 75 ohm length produces a midpoint impedance of 37.5 ohm, providing an accurate transformation to a 28 ohm load.

If the antenna's impedance is even lower than two parallel electrical quarter wavelengths of 50 ohm cable will provide, via a 25 ohm geometrical midpoint, transformation to 12.5 ohms.

If we take this to extremes, i.e. a very high open circuit impedance on the far end, the transformation ratio is so high that we end up with an RF short on the near end. We proved this earlier with the quarter wavelength notch filter suppressing the signal from the noise generator at its resonant frequency.

While elegantly simple, quarter wavelengths of cable have limitations when transforming impedances. They are frequency selective, unlike broadband baluns. Their matching range is limited as only a few impedances of coaxial cable are readily available. And they're only good for purely resistive impedances; complex reactive components will need an L-match or similar to tune out.

### Locating shorts and estimating lengths

You have a length of coax with connectors at both ends. It measures a dead DC short and there's no antenna or balun connected. A good multimeter can help diagnosis since the shorted end will measure a slightly lower resistance. But what if there is easy access to one end of the cable only?

Here we can exploit the properties of the half wave notch filter discussed before. Connect the near end of the cable to a T-piece in parallel with an HF receiver and RF noise generator. Little noise should be audible on any frequency if the short is at the near end. On the other hand, if the short is at the distant end the cable will have no effect on the noise generator's signal strength unless the receiver is tuned to a frequency that is an electrical half wavelength (or multiple) of the cable's electrical length. The distance from the receiver to the shorted part of the

cable should be about a third of the wavelength of the lowest frequency that a null is received on (a half wavelength times typical velocity factor).

Suppose that the cable is fine but we need to estimate its length. Its remote end is open circuit so we are interested in its behaviour as an electrical quarter wave. In this case we again tune the receiver from low to high until we find our first null. The cable's length will be about one-sixth the wavelength of this frequency (that is a quarter wavelength times typical velocity factor).

### Phase shifting, antenna gain and custard pies

As mentioned before, small variations in the time that the signal reaches the antenna from the transmitter normally don't matter. But they do with multi-element antennas which use small timing differences to produce gain and directivity.

You arrive at a country park to do some portable operating but find the space taken by local bumpkins running a custard pie throwing competition. Initially despondent, you watch and find that the event teaches rather a lot about feedlines and antennas, thanks to its rather strange rules.

The game comprises teams of two launchers, standing side by side, who must throw pies at their judge in front. A valid hit requires two pies from the one team to land at once. Because the distances and throwing speeds are the same both launchers need to throw simultaneously and at the same rate for multiple valid strikes. This works rather well, provided pie passers supply each launcher simultaneously at the same even rate.

Winning teams from each round compete in a play-off. This has similar rules except the launchers must now stand at different distances from the judge. They're still being passed pies at the same



time and throwing at the same time, speed and rate. However they never hit the judge simultaneously because the different distances staggered arrival times.

One team got the bright idea that pies should go to the closer launcher slightly later, and he should throw a moment after the further launcher. That did the trick and, more often than not, pies arrived simultaneously on the judge.

There was no extra physical exertion as the rate of throwing (i.e. frequency) had not varied. The only thing that changed is that the launchers were no longer quite throwing simultaneously. Rather smartly they were using a launch time difference to compensate for their different distances to the target.

Phased vertical antennas, which provide more gain than a single vertical, work a little like this. Unlike Yagis and quads, where only one element is driven, phased verticals have both elements driven. Each has its own feedline, connected in parallel with the other at the transmitter end. A pair of quarter wavelength ground planes, erected a quarter to a half wavelength apart, is suitable.

Gain in this arrangement occurs in the direction where signals (pies) from the two elements (launchers) arrive simultaneously. Assuming signals arrive from the transmitter at each antenna simultaneously (or in-phase) the maximum radiation is broadside to the two antennas in both directions. This is like the first case where the pie launchers were side by side equidistant from the judge.

If you want maximum radiation in directions other than broadside without moving the two vertical elements you need to introduce a timing (or phase) difference

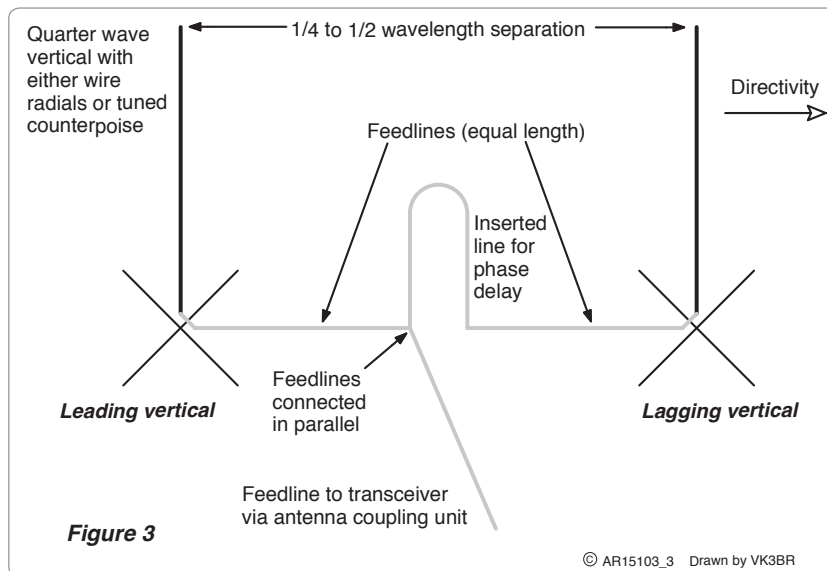


Figure 3: Phased verticals.

between them. Like how we delayed pie supply to one launcher but maintained the frequency of throwing, we do this by delaying RF's arrival at the element in the direction we wish to beam towards.

How do we delay RF? Make one vertical the 'lagging' element by adding some extra feedline. Figure 3 is a typical example.

Want to work the other direction? Simple - just add a switch or relay to make the other direction lagging to reverse the beam. Such instant switching is useful for competitive DX contacts where there's no time to swing the beam.

How much feedline is needed to create the delay? It varies. Different lengths give different radiation patterns. An electrical quarter wavelength (expressed as 90 degrees) gives a unidirectional (cardioid) pattern in the direction of the lagging element. Whereas an electrical half wavelength (180 degrees) throws a bidirectional pattern off the ends. Or, for a bidirectional broadside pattern,

switch out the added cable completely so that both verticals are fed 'in phase' (i.e. 0 degrees shift).

Complex impedances, matching to 50 ohms, element spacing and optimising nulls have not been covered here but are part of building phased verticals. Construction requires more study, cut and try than a simple dipole or single vertical. Consequently they're more for serious DXpeditions and contests than a casual one or two hours' operating at the beach. Detailed information appears in the *ARRL Antenna book* or ON4UN's *Low Band DXing*. However it all becomes worthwhile when you've got it right and can instantly null out interference and hear signals others can't.

## Conclusion

Coaxial cable is more than just a uniform pipe from rig to antenna. Its behaviour changes according to length and frequency. Knowing a little about this allows one to exploit its characteristics for a wide variety of antenna and other projects.



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# The spark gap signal that changed ANZAC history

*Telegrapher William Wolseley Falconer, RAN  
Australian Submarine HMAS AE2*

*Michael J. Charteris VK4QS / VK4XQM  
Ex Royal Australian Navy*

The year 2015, saw Australians & New Zealanders commemorate what can only be described as one of the most militarily important events in both nations somewhat short histories, the Centenary of ANZAC. But how many amateurs are aware of the fact that it was all down to an Australian Submarine HMAS AE2 which first breached the Dardanelles to enter the Sea of Marmora only hours before the ANZACs actually landed on the beaches of Gallipoli at 4:28Am on the morning of April 25th 1915. Sadly in the scheme of the greater ANZAC Legend, these gallant Officers and Sailors of the HMAS AE2 have been somewhat pushed from the limelight to the shadows of history. Yet their role in the Gallipoli campaign, as the first submarine to successfully negotiate the strong currents, shore batteries and sea mines of the Dardanelles, did in effect change the course of Australian and New Zealand Military history. Of the 37 crew members who served under Lt. Commander Henry Stoker, only 14 were born in Australia, 21 crew members were born in Great Britain, one in Brazil, and yes one in New Zealand to see it as a truly ANZAC operation.

The Dardanelles is a well-protected stretch of water some 35 miles long, with a swift fresh water current running one way, and a strong salt water current running in the opposite direction below it. Add to this, Ottoman gun batteries that line each side of the shore, and sea mines that lurk for a good length of the journey before you reach the Sea of Marmora. Now you

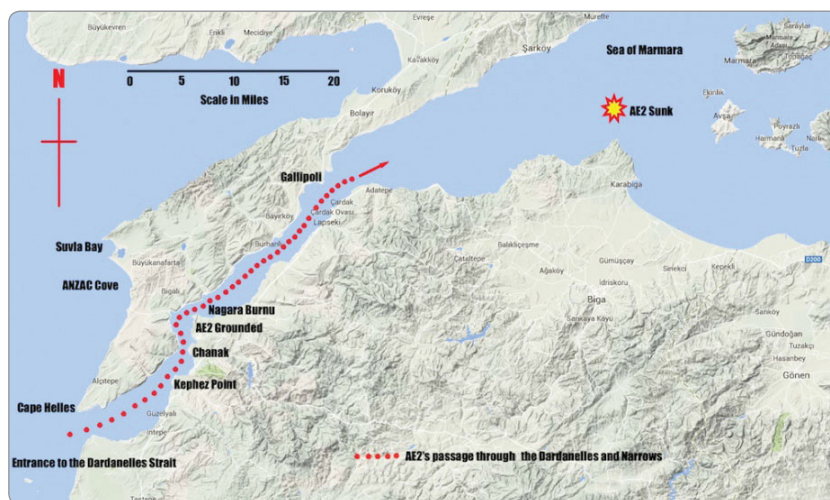
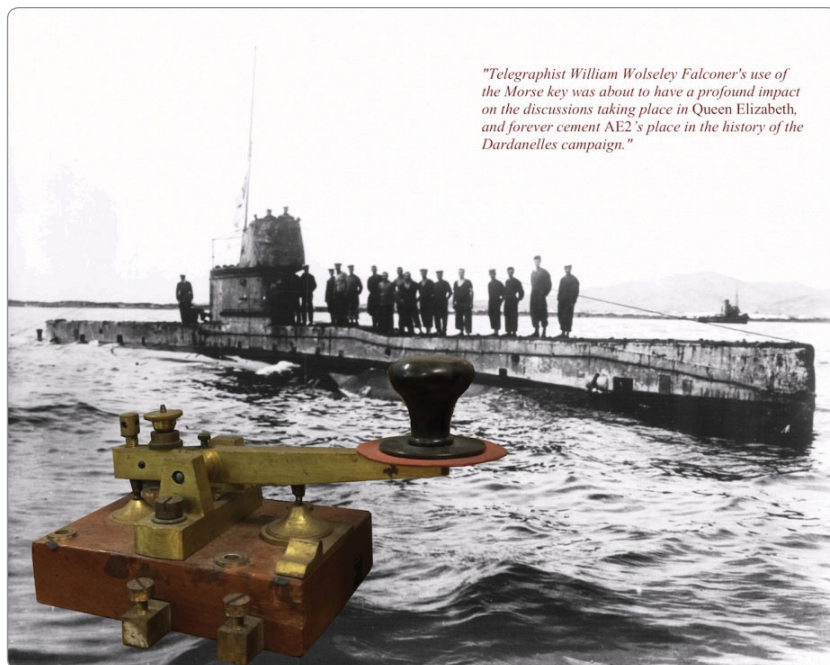


Figure 1: HMAS AE2 in the Sea of Marmora.

Photo 1: HMAS AE2.



*"Telegraphist William Wolseley Falconer's use of the Morse key was about to have a profound impact on the discussions taking place in Queen Elizabeth, and forever cement AE2's place in the history of the Dardanelles campaign."*



have some idea of what only can be described by many as a Suicide Mission. It was into this labyrinth of death that sailed the gallant men of HMAS AE2 with disaster their companion at every moment along the way.

When it comes to the Gallipoli landings, the fact is that this April 25th 1915 event had not gone well for the ANZACs. Stiff opposition from a determined enemy defending his homeland had seen the rumoured "Sick Man of Europe" present stiff opposition. Nor were they the "Push-over" everyone said they would be. After some 14 hours of hard fighting it was "Re-embarkation" that was being strongly considered by the ANZAC Commanders. To this end, General Birdwood sent a delegation to General Sir Ian Hamilton aboard the Flagship HMS Queen Elizabeth. They arrived around midnight to put the case forward for an immediate evacuation due to heavy losses.

Admiral Thursby was also present at this meeting, and he expressed the view that it would take three days to re-embark the already landed ANZACs. Thursby added words to the effect that, the Turks would probably not just standby and wave hankies as the ANZACs departed to fight another day. General Hamilton listened intently to both sides of the argument while considering what should be done. At about the same time that this crucial meeting was in progress, the AE2 had surfaced in the Sea of Marmora to recharge her batteries. Next the wireless antenna was erected, only to find that their receiver was inoperable and the transmitter was also playing up. Regardless of this, Captain Stoker ordered that the report be sent off to the Flagship. This was despite the fact that it could not be confirmed if the signal had in fact been transmitted, or for that matter if anyone had received their signals.

The task of sending the signal confirming that the HMAS AE2 had successfully breached the

Dardanelles fell to the submarine's Telegrapher, William Wolseley Falconer. Young Falconer had been born in Richmond, Victoria, and enlisted into the Royal Australian Navy at the age of 18 for a seven years stint. The Wireless equipment carried by the AE2 was the Marconi Type 10 Spark Gap Transmitter. I have found a reference to this particular set with details showing frequency range of 375 kHz to 1400 kHz, with a reliable transmitting range of 120 miles.

In their book "*Stoker's Submarine*", Fred & Elizabeth Brenchley said of Falconer:

If one man could claim to have influenced the course of history with a single deed, it would be AE2's Telegrapher William Falconer. It was Falconer's message on the night of the ANZAC offensive that figured in the midnight meeting aboard the flagship, on whether the ANZACs should be withdrawn. Captain Stoker wrote, *'At nightfall we again commenced to establish wireless communications with the fleet, but with no more success than before. Every possible test and overhaul of our instruments was carried out, but to no avail'*. However history shows that the message got through. Falconer was never acknowledged for the feat it actually was, but it was known about. Captain Francis Haworth Booth, the RAN representative in London, wrote to Naval Command in Melbourne on the 17th of December 1917. John (Tiny) Kerin, Stoker, and William Falconer were both nominated for awards, but sadly the Naval Board (Admiralty) rejected this because they (the Admiralty) had not proposed to take similar action for their personnel. As a prisoner of war in Turkey, Falconer was interned first at Afion Kara Hissar, then Belemelik. His technical expertise made him a valuable asset to the German engineers contracted to build the railway through the Taurus Mountains. Falconer survived these bitter years, and after his release returned to London by the end of

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### Receiving Valves (NOS except as noted)

OB2	\$9.00	6AF4	\$9.00
OA2	\$9.00	5Y3GT	\$20.00
8BN8	\$8.00	5AR4	\$28.00
7360	\$34.00	13DE7	\$8.00
6U8 (A)	\$8.50	12DK6	\$8.00
6SK7	\$8.00	12B26	\$18.00
6SH7	\$8.00	12BY7	\$20.00
6SG7	\$8.00	12BE6	\$12.00
6SC7	\$17.00	12BA6	\$12.00
6SA7	\$12.00	12AX7	\$25.00
6K6GT	\$9.00	12AU7	\$25.00
6JH8	\$9.00	12AT7	\$20.00
6HG6T	\$9.00		

### Transmitting Valves

6146BNos	\$50.00
6146BCh	\$30.00
2E26	\$11.00
G-807	\$15.00
6JE6C	\$65.00

*More valves avail.*

Ceramic Octal, 7 pin and 9 pin sockets from \$2.75ea;

Trimmers, Caps, Electrodes, Resistors, Alignment tools etc.

**My Drake TR4C & AC4PS - Good.**  
\$265 plus P&P



**Drake 2-B Incl calibrator - Good**  
\$450 plus P&P



*Much more available - call*

**Lafayette HA-230**  
Excellent.



**Heathkit SB-303**  
S/S Receiver. Nice  
\$340 plus P&P



**73, Stephen VK2ASC**

1918. He arrived back in Australia in April 1919 and was demobilized at his own request in September 1919.

## HMS Jed

Back at the entrance to the Dardanelles was the Royal Navy Destroyer HMS Jed. She had been sent there on wireless watch for any signals on the submarine guard frequency, from HMAS AE2. Thus, the signal sent by William Falconer from HMAS AE2 was picked up by HMS Jed and relayed to HMS Queen Elizabeth. Whilst aboard HMS Queen Elizabeth, no resolution had been reached, when out of

the blue Lieutenant Commander Brodie entered the room with the signal from HMAS AE2, relayed from HMS Jed. Admiral Keys took the signal from Brodie, and then announced to the room words to the effect "Gentlemen, an Australian submarine has achieved what no other submarine has done. It has breached the Dardanelles and is now in the Sea of Marmora". Hamilton asked for the signal and read it for himself, before telling the room, words to the effect, "The troops have gotten through the hardest part of the landing, and now all the need to do is to dig, dig, dig, until they are safe".

Thus the ANZAC legend that we know and commemorate today had its origins in the Spark Wireless signal transmitted by Telegrapher William Falconer on the Marconi Type 10 MF transmitter from the Australian Submarine HMAS AE2.

The reign of terror that HMAS AE2 caused to Turkish shipping in the Sea of Marmora led to serious delays in bringing up much needed reinforcements and supplies. Everything now had to come by way of a much longer route by road. This gave the ANZACs a pause for breath that saw them establish themselves at ANZAC Cove in a much more fortified defensive position. Sadly for everyone aboard the submarine, it only lasted five days. On 30 April 1915, HMAS AE2, whilst attempting to rendezvous with the Royal Navy Submarine, HMS E14, was confronted with the Ottoman Torpedo boat "Sultanhisar". As AE2 attempted to dive to safety it encountered mechanical problems which forced it to surface once again. It was then attacked by "Sultanhisar" and critically damaged. Stoker realized the game was up and now focused on sinking the AE2 so it would not fall into Ottoman hands. He ordered the Executive Officer, Lieutenant Geoffrey Haggard RN, to open the sea cocks to flood the vessel internally. The rest of the Officers and crew were ordered to



Photo 2: Lieutenant Commander Geoffrey Haggard DSC & Commander Henry Stoker DSO.

abandon the submarine. Everyone got off safely and the crew went into captivity for the next three and a half years.

For his gallantry, Lieutenant Commander Henry Stoker was awarded the Distinguished Service Order from the hand of King George the Fifth in 1919. The truth be known, Stoker deserved the Victoria Cross, as did his Executive Officer, Lieutenant Haggard, let alone gallantry awards for the rest of the crew as well. But sadly by the time the war ended, some of the crew had already died in captivity. And worst of all, by 1919 Gallipoli was a dirty word in the halls of power. Nobody wanted to talk about this grand debacle cooked up by Winston Churchill to placate the Russians back in early 1915. So it was that Commander Stoker was awarded the lesser Distinguished Service Order, being robbed of his true recognition of courage, the Victoria Cross. His XO, Lieutenant Commander Geoffrey Haggard received the Distinguished Service Cross, also robbed of a Victoria Cross for gallantry in HMAS AE2.

## Creation of VI4AE2

With the announcement that both Australia and New Zealand would be propagating the Special call signs, VK100ANZAC and ZL100ANZAC, I began to feel that somehow the whole story of Australia's involvement in the Gallipoli campaign was not being told. With all this in mind I decided to apply for a special event call sign, from the ACMA here in Australia. I decided on VI4AE2, and it was duly approved. All I needed now was a few other fellow amateurs who felt as strongly about the HMAS AE2 operation as I did. The team ended up as Mike Paterson VK4MIK ex RAN, Dave Wescombe-Dow VK5BUG ex RAN, Alan Shannon VK4SN ex RAAF, Peter Hewitson, ex Commercial Telegrapher in England and Australia, Bob Beck VK4RJ former P29 operator and ex-Rabaul Plantation Manager and myself Mike Charteris VK4QS ex RAN. From here I created a webpage on qrz.com under the call sign VI4AE2, with the overall story and as much information and photos I could find. So pop along to qrz.com and look up VI4AE2 and you will observe all that is presented in "Their Name".



Photo 3: The VI4AE2 QSL card.

## VI4AE2 operations and publicity

Together a schedule of operation was worked out so that it played to each operator's strengths and time frames regarding work and family. The time frame for having VI4AE2 on air was from 25<sup>th</sup> April to 30<sup>th</sup> April, which corresponded with the operations of HMAS AE2 in the Dardanelles and the Sea Of Marmora. During the course of the next five days we, as a group, achieved over 2500 contacts worldwide. What we also achieved was a unique "World First" by way of VI4AE2 being the first ever operational Special Event call sign to go to air and make contacts on 630 m in Australia, if not the world. This honour was shared by both Peter Hewitson and Dave Wescombe-Down with contacts into Queensland and South Australia on this band. By definition Peter VK4QC made the first CW contact ever, using VI4AE2 on 630 m with Roger VK4YB, on 472.5 kHz, at 0638Z on 25<sup>th</sup> April 2015. The trail blazing by these two amateur radio operators on 630 m was indeed very special in regards to the transmission mode and frequency of operation for the signal sent by Telegrapher William Falconer aboard HMAS AE2.

Publicity for VI4AE2 was emailed to the WIA, ARRL, RSGB and NZART, to appear on their websites and in their magazines with good responses and little news articles about our event. I can only thank them for their efforts to propagate

our message when it came to the impetus of the Special Event station VI4AE2. The results of a social media campaign on Facebook and other media lead to a contact with the President of the Lilydale RSL, who in turn put me in personal contact with Mrs Jenny Smyth. Jenny is the daughter of Lieutenant Commander Geoffrey

Haggard, the former Executive Officer of the Submarine HMAS AE2. I have since spoken to Jenny many times on the phone, and exchanged gifts with her of a naval nature. Specifically so, the book she wrote about her father, *"The Long Silence"*. Now an amazing friendship has been formed, just one person removed from the actual Executive Office aboard the AE2.

## Operating VI4AE2 on air

When it came to firing up VI4AE2 on 20 m SSB by Bob Beck or 20 m CW by Alan Shannon and Peter Hewitson, I am told that the best description was a cacophony of signals desperate to work VI4AE2.

These guys really had their hands full every time they sat down to operate in the name of these gallant submariners from 100 years ago. A big mention in despatches must go to Mike "Banjo" Paterson VK4MIK for lighting up North Queensland and beyond with VI4AE2 by way of his AM/CW on ANZAC Day till 30<sup>th</sup> April. This concept, Mike tells me, is growing each year with more operators making the effort to set up in a former military area and operate old equipment, often ex-military by way of Amplitude Modulation and Morse. As for myself, well I probably had it the easiest run out of everyone by way of taking on operations on the 80 m band each night. It was probably also the most enjoyable, as I could discuss the men and the events behind VI4AE2. The other point is that VI4AE2 acted

as a catalyst for others to share their own and their families experiences of the military kind. Whether it was about the service of the operator himself, or his grandad who served at Gallipoli and later in France and Belgium, people shared. And that in essence is what it was all about, allowing people to talk about what the Centenary of ANZAC meant to "Them". It was also such a privilege to submit an article to Navy News on the HMAS AE2 and VI4AE2. Through this article we told the readers that the story of HMAS AE2 was being taken to the world for five days through amateur radio and our special call VI4AE2 in this centenary of ANZAC year 2015. (NAVY NEWS, Edition, May 21<sup>st</sup>, 2015, is available as a download from the Net).

I would like to take this opportunity to sincerely thank all five Gentlemen Operators for their excellent radio skills, personal time and generosity when it came to every aspect of this event. And let's not forget every person who worked us, or visited the VI4AE2, QRZ website in honour of the Officers and Men of HMAS AE2. I would also like to thank the Wireless Institute of Australia for their approval of the special call sign, and their support in promoting VI4AE2 as part of their overall ANZAC Centenary celebrations. Finally a very special "Thank you BZ" to Alan Shannon VK4SN, without whom this project would never have been as successful as it turned out to be. For if was not for his patience, computer skills and radio operating abilities we would never have got off the mark from day one.

## References

*"Stokers Submarine"* by Fred & Elizabeth Brenchley.

The Royal Australian Navy webpage, HMAS AE2 <http://www.navy.gov.au/hmas-ae2>

The AE2 Foundation.

Images courtesy Royal Australian Navy, with permission.





# Over to you

## Letter to the Editor

Dear Peter,

As many members will already be aware, I resigned as Treasurer of the Wireless Institute of Australia on 23rd February 2016, after a short six-week tenure. During this time I identified major areas of concern and presented the Board with a path to fix these problems.

The Board ignored my advice and, as such, I was unable to perform my responsibilities in the best interests of the Institute or its members. I have ethical and professional concerns about how our Institute and its finances are being managed. Members should rightly be concerned about the state of the WIA, and should be asking questions. I am not suggesting any fraudulent or criminal activity, but members should be concerned about good business practice and independent, impartial decision making.

I am bound to a level of confidentiality by the Corporations Act. So to those people who have contacted me asking for details, I thank you for your interest (and support) and I apologise for not being able to share specific details. It is the Board's decision as to what information they share (or don't share) between themselves and with the broader membership base.

The WIA is a Public Company limited by guarantee. The Board is voted in by us, the members, and they have an obligation and responsibility to operate in accordance with the Constitution and the Corporations Act. They are also expected to make good business decisions and operate with sound business practices.

Board members need specific skills as well as a broad understanding of the regulations and industry in which they operate. Being a keen hobbyist is not enough. Running your own private business is also a different matter – it's your business, your money and your decisions. Sure, there are rules you need to abide by: Tax, Employment, Corporations, OH&S etc., but it's still different to a Public Company. There are clearly some similarities and overlaps that can make a business owner a good Board member. But there are other critical skills. One is a strong appreciation of governance and what this means in a practical sense.

Governance is the process of decision making and the process by which decisions are (or aren't) implemented. I refer to an article which in part, describes good governance in a Public Company environment.

*"It is about considering the interests of the organisation and members before any personal interest. Putting the interests of the organisation ahead of your own shouldn't be that complicated. Many people cannot see that their well-*

*intentioned involvement puts their interests ahead of the organisations.... Where a Board member has a direct financial relationship to the organisation, the other Board members should seek competing bids and document that the provider with the conflict is the best provider for the organisation, or ask the person to step off the Board. This is not "firing" a Board member and should not imply any disgrace whatsoever. It just means that sometimes the best way to serve the organisation you care about is not to be on the Board".*

*(financearts.com)*

Given the recent resignations of two Treasurers (and one assistant Treasurer) and at least one Board member due to what is clearly a genuine concern over the operation of the Board and management of the National Office, I ask that the Board provide members with answers to the following:

1. Has Risk Management been considered and implemented; it needs to cover key areas such as: financial, operational, strategic and regulatory management. After five months in office, should the paid Acting Executive Manager (and Director) have addressed the following and advised the Board:
  - a. Are the skills required for each portfolio within the WIA's business properly understood and resourced?
  - b. Are all business critical systems and processes properly documented?
  - c. Are there succession plans? What happens if a key person resigns or becomes unable to perform their role? Think of areas like Financial management, Web site management, management of the ACMA Contract Services (Assessment Services and Callsign Recommendations).
  - d. Is the WIA using appropriate technologies and processes to enable efficient and effective information sharing, service delivery and record keeping?
  - e. System passwords are taped to computer monitors in an open office environment. Volunteers, contractors and staff can easily see these notes. Has the National Office implemented a policy for security and user access to IT resources and online banking? Are user logons shared? Have documented security policies been communicated to volunteers and staff?
2. Another very topical example as I write this letter: Why is it that four days after resigning I

still have access to the Institute's accounting system (MYOB) and online banking? Why am I still receiving confidential reports from the Institutes business systems? Should the Board be concerned that the National Office does not have knowledge or control over such important aspects of the business?

3. Proper consideration to conflict of interest is given whenever a decision is made that has the perception of a conflict of interest. The most recent examples being the appointment of a Board member to the temporary role of Executive Manager at the National Office and the other being the rental of floor space for vehicle storage to another Director. Can the Board illustrate to members that any possible conflict of interest was discussed and documented, and an appropriate strategy was adopted? Has either of these arrangements been subjected to any competing bids and/or market assessment or skills assessment?
4. Has the Board undertaken a proper and critical review of the operation of the National Office and the change process that has recently been implemented, given that these activities were performed by a Director being paid for the services?
5. There have been claims that many processes and decisions are not transparent or readily available for review. Can the Board show members that it has investigated these claims and taken appropriate actions, if required?
6. Has the Board assessed its own culture and conduct given the recent resignations/ departures of Board members, staff and volunteers?
7. Can the Board explain to members why its needs to spend a considerable sum of members' money on external consultants, accountants, auditors and travel, when for years the Institute has been able to rely on the efforts of volunteers to manage its accounts and financial affairs?
8. Has the Board considered Corporate Governance training for existing and new Board members?

I am a staunch supporter of the WIA and believe we need a strong Institute to represent us and our hobby. It is the responsibility of the Board and its members to ensure those obligations are executed with professionalism, transparency and competence. I welcome answers that put these matters to rest.

Sincerely,

Chris Chapman VK3QB  
WIA Member



# Over to you

## Letter to the Editor

Dear Peter,

Chris Chapman raises a number of issues concerning WIA governance and financial practices. He also highlights potential conflicts of interest in appointing Director Fred Swainston as a paid contractor for a limited period, and the rental of some warehouse space to another WIA Director, Robert Broomhead.

Firstly, in addressing Chris's issues, it must be noted that Paul Simmonds, appointed as a Director on 5 January 2016, was not part of the events outlined and is not party to this reply. Secondly, we must provide some background so members can put things into context.

By mid-2015, the Directors were receiving many adverse member comments about delays and difficulties in dealing with the National Office, and the number was increasing. Directors expressed the opinion that fundamental change was necessary to improve customer service and prepare for the possibility of increasing workloads resulting from the Spectrum Review.

In May the Board commissioned a report into office operations. Prepared by Silverdale Training and Development, it identified some key deficiencies. A Board meeting was then convened at Melbourne's Tullamarine Airport in August 2015, and a summary of the findings was presented. The Board resolved to restructure the WIA Office, replacing the existing Office Manager position with a higher level Executive Administrator. Subsequently, the existing Office Manager position was made redundant. Consequent on that, the Board decided to task WIA Director Fred Swainston with improving the office processes, procedures and work-flow in preparation for a new Executive Administrator appointment, and to ensure continuity of service to members.

The process of appointing Fred Swainston has been raised as a conflict of interest in that he was a WIA Director, and the Board did not seek competitive quotations on the open market.

The Board viewed that, as the role was highly specialised, required key knowledge, and that seeking outside quotes would critically delay action, engaging an unknown person was potentially a higher risk. Fred had intimate knowledge of the Office and its very specialist work, was immediately available, and could work for the WIA for a limited period of time at a very reasonable rate, the cost of which was already provisioned in the WIA accounts for the total cost of the Office Manager.

As required of all Directors where a conflict of interest may exist, Fred Swainston was absent from the vote at Tullamarine when his

appointment was decided. No concerns or objections were raised by other Board members or the Treasurer. In September, Treasurer John Longayroux resigned unexpectedly. Fred, assisted by Robert Broomhead, then had to embark on a "mission of discovery", without benefit of any hand-over period from the ex-Treasurer, having to learn all the WIA's various banking, membership and financial systems from scratch, requiring many, many man-hours. Necessarily, there was a short period when the accounts took a back seat to the day-to-day business.

Regrettably, the task was found to be more complex and took longer than expected. Over about a five-month period, Fred was successful in making the Office more efficient and responsive to members. He established improved, written procedures for enquiries and the general office workflow, introduced new office security measures, and caught up with the accounting entries. The Office now works much better from a customer service and business systems perspective, we are now receiving much improved feedback from members, and revenue has increased.

The reality is that, in small volunteer organisations like the WIA where Directors are also doers, sometimes things need to get done expeditiously. In retrospect, it may have been a better 'look' to seek competitive quotations, but this weighed against the greater risks identified, and it is doubtful the outcome would have been as successful.

Fred's work was completed at the end of February, allowing for a two-week handover to our new Executive Administrator, Bruce Deefholts. Fred continues to provide support to the Office in his capacity as a WIA Director.

Members were kept informed of the key changes through WIA News.

Regarding the circumstances behind the rental of factory space, Robert Broomhead approached the Board in September 2015 with an offer of \$2200 per year to tenant a vehicle space within the WIA factory space on a casual basis to provide the WIA an additional income source. The rent offered being similar to other comparative rentals in the area. Robert stepped back whilst the matter was discussed and resolution passed by the Board which approved the rental arrangement. However, in order to avoid any possible perception of a conflict of interest, Robert has agreed to end the rental and relocate the vehicle, a refund will be provided for the remaining rental period.

Chris Chapman became the new Treasurer on 5 January 2016. After a few weeks and four or five visits to the office, Chris delivered a Report to

the Board's February teleconference, his second Board meeting, expressing concerns about accounting processes and raising the various governance issues.

Chris is unhappy that the Board only addressed part of his report at that February teleconference. The priority was to address the most immediate issue – the ability of the WIA to present accurate accounts to the Auditor at the upcoming financial review, and those were the items discussed from Chris's report. Chris also requested, and was given, authority to use the previous Treasurer as his assistant. Chris resigned on 23 February 2016.

Monthly Board teleconferences are time-constrained and each needs to address many issues. The other items in Chris' Report, not being time-critical, were discussed at the Board meeting on 1 March, after his resignation. The Board views Chris's statement that his advice was ignored does not accurately describe what occurred.

Other corporate governance issues Chris raises include not removing his access to the computer systems for four days after his resignation, the absence of risk management especially when key people resign, and security of computer passwords. We did consider removing Chris' computer access, but, as we are a volunteer organisation that still believes in the concept of goodwill, we decided to maintain Chris' computer access for a few days in case of unforeseen events during the handover to the new Administrator. His access was revoked probably around the time he wrote the letter.

Chris rightly points out that corporate governance issues are important, and that includes succession planning and risk management. The Board agrees, and we could have done better. However, volunteer organisations constantly struggle with succession planning and the loss of key personnel. The WIA is no different.

The Board has resolved to instigate a full review of WIA corporate governance and procedures over the coming year, which would naturally include risk assessment.

Determined to get to the bottom of the state of the accounts following Chris's resignation, President Phil Wait called a meeting at the National Office with Fred Swainston, new Executive Administrator Bruce Deefholts, our accountant and the Auditor.

Continued on page 22

They spent several hours analysing the accounting system and the financial records, determining that the WIA did not appear to have any major accounting issues. Accounting processes and record keeping has been vastly improved and major problems with the WIA's upcoming annual financial review are not anticipated. On information available at the time of writing, the WIA has no major financial issues. We expect the Auditor's review to go smoothly and the financial result for 2015 will be available after that.

The WIA's professional accountant, Murray Leadbetter, has agreed to act as an independent paid Treasurer for as long as required, and was appointed by the Board at the 1 March teleconference. The Board considers this is the best course of action to remove any suggestion of bias or impropriety.

In summary, is Chris correct that the WIA needs to improve its governance? Yes, no doubt. The President has directed that all WIA Directors will be required to attend a short course on corporate governance. Remember, WIA Directors

are elected and come from diverse backgrounds.

Are there any serious issues concerning the WIA's finances and accounting practices? On all the information currently available, no.

Was the travel expenditure for the August Board meeting justified? Has the WIA achieved the best operational outcome by the actions of the Board? We believe, emphatically, yes.

The WIA Board of Directors



## VK5news Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

February is the month of the AGM for AHARS so we have a new committee. Barry VK5BW is President but Jim VK5TR has moved into Vice-President's chair. The Treasurer and Secretary have remained the same. Two new members have joined the committee.

The list is now:

Barry VK5BW	President
Jim VK5TR	Vice-President
Peter VK5APR	Treasurer
Jean VK5TSX	Secretary
Roy VK5NRG	
Patrick VK5MPJ	
Rubens VK5FE	

We hope this will be as good a year as the last one. Barry has undertaken to send out regular reports to all members and the website is working well.

The shack is used most weekends, with mini lectures, construction sessions and assessments. Thanks to all those involved in these activities. As always, volunteers are welcome and put to work where possible. The Girl Guides on the site of the Shack has been disbanded but our continued use is guaranteed.

Two presentations were made. One to Christine, who has managed



Photo 1: Ethan, Roy VK5NRG, Jean VK5TSX, Peter VK5APR, Barry VK5BW, Patrick VK5MPJ and Jim VK5TR.

our kitchen and suppers so well and cheerfully for several years now. This makes a pleasant break in the evenings' activities. The other presentation was to Roy VK5NRG who has taken on the task of filling the orders for out kits, including the new one released this year.

### The Solar Car Challenge

David VK5KC put his name down as a volunteer for the Solar Car

Challenge of 2015, which was run on October. A photo appeared in AR several months ago of David after he arrived in Adelaide, with the promise that he would tell us about his experiences later.

This was actually the 14<sup>th</sup> time solar cars have been driven from Darwin to Adelaide. In the first year the leading car took three weeks to make the distance. This time the winning car took four days!



From the beginning it has been a multi-national event. This year there were 45 teams representing 20 countries. Most of the members of the teams are young people from Universities or high schools. Many of the officials have participated a number of times. In fact two men had been officiating all 14 years.

There are three levels of cars, The Challenge car aim to go as fast as they can and are allowed to run on into the night. The Cruising cars must be able to carry a passenger though they are not required to do so at all times, earning points whenever they have a passenger. These cars all start at 8 am and must stop at 5 pm each day with a number of check points at which they must stop for 30 minutes. The Adventure cars are there for the fun of it, some of them actually being carried on truck for part of the way, only driving on the road sometimes. Often these cars have participated in earlier years and the teams want to be part of it again.

These days all the cars used the same type of motors, a German design, 50-volt DC with a converter to 3-phase AC for the tritium system, and most of them have lithium/iron polymer batteries. Some graphic pictures showed us that if these batteries catch fire, the fire is hard to extinguish and dirt is the best fire-damping material.

There are three types of volunteers: Scrutineers who go over the cars with a fine tooth comb, checking that they comply with the rules and that they are safe, for themselves and for other drivers on the road (one of the tests being that they can brake safely within a specific distance). The next level of official is the Race Controllers at the start and finish and at the check points on the way. Finally you have the Observers, which was the group to which David was assigned. As an Observer, he was



Photo 2: David VK5KC as an Observer.

attached to a number of different cars on different days. Sometimes he was a passenger, at other times he was following his particular car and checking off the list of road conditions and ensuring that his car complied with all the rules.

Everyone camped where they stopped, sometimes it was near a Caravan Park or a town but often it was really out in the bush. All participants, officials and the teams were catered for but they had to have their own sleeping equipment. David is now the proud owner of a Swag.

The winning car was a Dutch car and its average speed was 91.7 km/h, the second one, only a short distance behind was also Dutch and it made an average speed of 91.63 km/h.

As sponsors of the Solar Car Race, Mitsubishi supplied 15 hybrid cars, one of which David drove up to Darwin. These cars could do 50 km on a fully charged battery, so they stopped off at a town where they could be charged overnight - ready for the next morning.

This was a very interesting lecture and one that possibly made others keen to participate in two years' time, for the 15<sup>th</sup> Challenge.

### John Moyle Field Day

Weather permitting (i.e. under 35° C), AHARS will again participate in the JM Field Day at Wombaroo. Please listen out for VK5BAR if you are operating a home station or come up to join in the fun.

It is the weekend of 20 & 21 March. Stations operate from 11.30 am on Saturday to 11.29 am on Sunday (SA time). All equipment used must be portable and run on batteries or generators brought up for the purpose. Antennas must not be erected until the morning of the Contest and will be disassembled before you get lunch on Sunday. VK5BAR operates in the 24 hour section, HF only with multiple operators. It is a fun weekend.

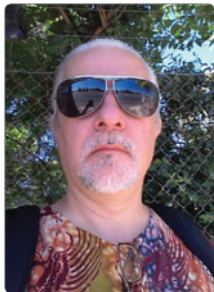
73

Christine VK5CTY.



Plan ahead

GippsTech 2016 | 9 & 10 July 2016



# CW Today

Louis Szondy VK5EEE

[vk5eee@wia.org.au](mailto:vk5eee@wia.org.au)

Welcome to the 6<sup>th</sup> edition of **CW Today**. In the 3<sup>rd</sup> edition we looked at some of the little known history of the interrupted carrier wave Morse code mode and why it would really be more accurate to call it the Gerke code. We have Friedrich Clemens Gerke to thank for creating a much improved version of Morse code which went on to become what we know as the International Morse code. Yet there are many languages that use non-Latin alphabets and some of them also have their own Morse code versions. A useful resource at Wikipedia (1) shows Greek, Cyrillic (Russian, Ukrainian), Hebrew, Arabic, Persian, Japanese, Korean and Thai Morse code. Chinese could be sent as four-digit or three-letter codes.

## National Morse codes

Many of these Morse code languages are perhaps now unheard of in actual use such as Arabic, Thai or Persian. Yet others such as Japanese and Cyrillic are in widespread use. Also those languages which use extended Latin alphabets or special accent characters, such as French, German, Spanish, Turkish and Norwegian as just a few examples, have additional Morse code equivalents for those characters, such as in German Ä (A umlaut) is di-dah-di-dah, Ö (O umlaut) is dah-dah-dah-dit, U umlaut is di-di-dah-dah, and CH is sometimes sent as dah-dah-dah-dah.

## Japanese Wabun code

Around 7023 kHz in the evenings, one will often hear Japanese "Wabun" CW, easy to identify by

the long characters, and the dah-di-di-dah-dah-dah which means "switching to Japanese Morse". To switch back to International Morse the code di-di-di-dah-dit is sent. Thus one could say "good bye" in Japanese using International Morse by sending SAYONARA or in Japanese Morse as Sa-Yo-U-Na-Ra which is dah-di-dah-di-dah dah-dah di-di-dah di-dah-dit di-di-dit and before this dah-di-di-dah-dah-dah to signify that what follows is Japanese, and after it di-di-di-dah-dit if International Morse follows again. The A1 CW Club page (2) shows some Japanese words in Wabun Code. It may be safer to only use "Sa Yo U Na Ra" at the end of the QSO though, as otherwise the other station may come back with a lot of long Wabun which you won't be able to decode on the spot. Most Japanese amateur radio CW operators don't know Wabun Code, or "da-di-di-dah-dah-dah"!

## Russian Morse code

Much easier however, is Russian (Cyrillic) Morse. One doesn't have to know the Russian alphabet, though it is not hard to learn, in order to be able to exchange a "rubber stamp" QSO with a Russian amateur radio station, and you are very unlikely to be hit by lots of Russian words in return. The following is an example of a typical Russian rubber stamp QSO, in brackets are the English CW meanings: UA1ABC DE VK9XYZ ZDR (GA/GM/GE) SPB (TNX) ZA (FER) QSO RST 579 OP STAN QTH XMAS ISLAND HW? BK and you can sign off with SPB 73 DSW (GB/CUAGN).

Russian CW operators are

generally proficient and most Russian amateurs on HF seem to be quite good at CW. A fun and interesting award to chase is the RDA Award – Russian Districts Award. This is akin to WAS (Worked All States) in USA only much more versatile, with a huge number of districts available. "Oblasts" or administrative states are characterised by two letters, and followed by two digits which are a smaller sub division. A nice addition to the shack are amateur radio maps available from Aliy Kuisokov UA6YW at [kuisokov.ru](http://kuisokov.ru) – the Amateur Radio Map of Russia is in Cyrillic but is detailed and lists all the Oblasts as well as call areas and call sign codes for Russia.

If you want to attract the attention of Russian CW OPs while chasing RDA, instead of calling CQ CQ CQ DE CALLSIGN CALLSIGN PSE K use the format: WSEM WSEM WSEM CALLSIGN CALLSIGN K (generally without the DE), which in Cyrillic script is BCEN and means "ALL".

## VK2WI automated Morse transmissions

We must thank the ARNSW (Amateur Radio New South Wales) for continuous service on behalf of VK CW OPs in funding and supplying the automated CW transmissions on 3699 kHz for so many years. VK2WI also serves as a band condition indicator. Transmit power is 35 watts into a half wave dipole, 10 metres high.

The content of the transmissions is generated by a programmable controller. Originally this unit had storage of 1100 words which lasted

a bit over two hours. This has now been extended to over 3700 words which will take almost eight hours to cycle through allowing more variation in the transmissions. Transmission speeds also are cycled through to give listeners a variety of different combinations of speed and text. A PDF file (3) containing some of the current text is available at the arnsw.org.au website. The content of this file is actually very interesting as it details the development of the Dural facility itself.

Thanks go to Les VK2KYJ for development of the Morse Generator.

Reception reports are welcome and a QSL card is available in return for written reports received. These can be sent by post to BEACON REPORT, ARNSW, P.O. Box 6044, Dural Delivery Centre, NSW, 2158 or by Email to [callbacks@arnsw.org.au](mailto:callbacks@arnsw.org.au) with "Beacon Report" in the subject line.

### Commercial Morse code on non-Amateur HF bands

Old timers will remember the days when HF was full of Morse code. INTERPOL, many national police forces, ship and shore stations, military, International Red Cross, news agencies, embassies and others were all to be heard using CW. These days there is very little remaining of CW outside the amateur radio bands, but the presence is still there and these days most radio amateurs are unaware of this fact. For example, the two most technologically advanced nations in Asia, Japan and South Korea; both still have CW coastal stations operating to communicate with some of their ships at sea. A listen around the 8, 12 (13), 16 (17) and 22 MHz HF marine bands will net results, though you may have to listen long for a telegram or message in Japanese or Korean Morse to be sent or received. The South Korean coastal stations

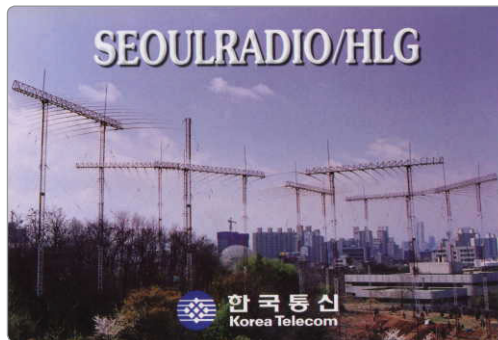


Photo 1: QSL card from Seoul Radio/HLG.

HLF/HLG/HLJ/HLO/HLW now a subdivision of Korea Telecom are the easiest to find.

Reception reports of the South Korean coastal stations can be sent to address: 680-63 Jayang-dong, Gwangjin-Gu, Seoul, 143-707 Korea (Telephone: +82 2 453 1181 Fax: +82 2 453 5002) and may be verified by a nice QSL card (Photo 1) in English and Korean with a friendly letter by QSL manager Mr Woo Hwa Lee DS1QGG.

A few navies, notably Russia and Pakistan are still using CW, at least in reserve, and recently the Indonesian "National Resilience Institute" has been heard by this author at 00Z and 12Z on 6365, 12235 and 18980 kHz in Bahasa Indonesian language. There appears to be a fourth frequency, if anyone can find it do let me know. There may also be additional broadcast times. The tuning signal gives "P50" but this is not the call sign, which appears at the end of transmissions and appears to be either 7CB or 7CJ.

Photo 2: Mr Woo Hwa Lee DS1QGG with some of the HLG station antennas in the background.



### VK CW activities

7050 continues to be active as a CW calling frequency at any time around Australia, while other centre-of-activity frequencies during the day time when things may be quiet, that have produced results, are 14020-14025 and 21020-21025 kHz. More information at [www.vkcnw.net/7050](http://www.vkcnw.net/7050)

A useful page with an up-to-date list of CW broadcasts, nets, and regular activities can be found at [www.vkcnw.net/skeds](http://www.vkcnw.net/skeds) and a few of the regular entries include:

#### Sundays

10 am to Noon Sydney time, the 43-year old weekly CW Net on 7025 kHz. There have been over 2,200 weekly sessions of this net since it was started in 1973. Regular net controllers are Chris VK1CT, Ray VK2COX, Drew VK3XU and Ron VK3AVA.

#### Daily except Sunday

0900Z-1000Z, calling on 7050 kHz with QSY, CW Bash Hour.

For the CW Bash there are nightly themes, not obligatory, namely: Monday nights "Boat Anchors", or use your oldest rig(s). Tuesdays, slow speed and/or straight keys. Wednesdays bug keys and/or sloppy CW. Thursdays QRQ or go as fast as you dare. Fridays, QRP, or alternatively turn down the power to half or quarter of the power output that you normally use. Saturdays, anything goes.

#### Monday through Friday

0830Z, 7051.2 kHz daily CW Net (Tuesdays is QRS). This is a short and simple net, although often QSOs ensue afterwards. Usual net controllers are Dave VK3GDM, or myself Lou VK5EEE.

The CW News Broadcast (QST) is also a regular feature, at the time of writing it is broadcast by Peter VK4QC three times weekly on three frequencies at different speeds: Saturday 0400 UTC at 20 WPM repeated at 2200 UTC (Sunday mornings) at 17 WPM on 7022.5, 14022.5 and



21022.5 kHz and again Monday evenings at 1000 UTC on 3522.5, 7022.5 and 14022.5 kHz. Please call back afterwards or send reception reports to [vk4qc@wia.org.au](mailto:vk4qc@wia.org.au)

Michael VK2CCW continues Monday and Friday evenings CW practice sessions around 7115 kHz LSB at 0900 UTC at speeds from 10 to 20 WPM.

### High Speed CW Practice

Especially on Thursday nights during CW Bash hour, quite a few stations are happy to practice sending CW at around 30-40 WPM with calling on 7050 and QSY up or down from there. Calling CQ on Thursday nights around 0900 UTC on 7050 at higher speeds should result in some QRQ contacts.

As always, your feedback and suggestions are always welcome!

Wishing you many happy CW contacts, de Lou, VK5EEE

[1]: [https://en.wikipedia.org/wiki/Morse\\_code\\_for\\_non-Latin\\_alphabets](https://en.wikipedia.org/wiki/Morse_code_for_non-Latin_alphabets)

[2]: [http://a1club.net/CW\\_J\\_e.htm](http://a1club.net/CW_J_e.htm)

[3]: [http://www.arnsw.org.au/forms/vk2wi\\_morsetext3.pdf](http://www.arnsw.org.au/forms/vk2wi_morsetext3.pdf)



## PerthTech Saturday 30<sup>th</sup> April

PerthTech is a one-day event consisting of technical presentations that will interest Amateur Radio Enthusiasts.

**Date:** Saturday 30<sup>th</sup> April 2016

**Venue:** Bayswater Hotel, 78-80 Railway Parade, Bayswater

**Time:** 0845 to 1700

**Price:** \$20 per head. The ticket includes morning and afternoon tea.



### PerthTech Programme

Phil VK6PH will talk about critically coupled antennas, David VK5DGR brings us Codec2, and Phil Wait, WIA President, will talk about the Institute, what it's up to and what it would like to be up to. John VK6AG will talk about the burgeoning digital voice modes, accelerated by the arrival on the scene of System Fusion, Wires-x and Digital Mobile Radio (DMR). You'll hear about playing with satellites and also about the Allstar network by Bob VK6ZGN. Other presentations will complete the day, along with ample time to mix socially.

Lunch is available in the Hotel restaurant at your own cost. The restaurant caters for all tastes from bar snacks to full meals.

Tickets are available online from [trybooking.com](http://trybooking.com), event code KFJV

A flier and a link to booking are available at [vk6.net](http://vk6.net). Enquiries to [committee@vk6.net](mailto:committee@vk6.net)

**PerthTech is an initiative of W.A. Amateur Radio News Inc.**

## MEMNET



### Have you registered for MEMNET yet?

Go to [www.wia.org.au](http://www.wia.org.au) click on '**For Members**', then click on '**Log into MEMNET**', and register... it's very simple.

If you have already registered for MEMNET but have not received a confirmation Email we may not have your correct email address.

Please email [memnet@wia.org.au](mailto:memnet@wia.org.au) with your email address, name and membership number.

If you are changing your email address, please *remember to update* your information in **MEMNET**.



# ALARA

Christine Taylor VK5CTY – Publicity Officer

## Remember Daylight Saving changes

The Monday Night Net will change to 1030 Zulu (8.30 EST and 8.00 CST) once we all change to Standard time instead of daylight saving time. This does reduce the QRM for everyone as we are all into night hours instead of daylight hours and propagation improves when both ends of a contact are in night.

We will continue the First Mondays on EchoLink and the third Mondays on both 80 m and EchoLink. It is pleasing to hear a few different voices when we operate on EchoLink, but we still would like to have people use 80 m if possible.

## VK5 luncheon at Firle

We tried a different place this time again; this one was very near to where Marilyn VK5DMS lives. Next time we will be in the city but at a different venue to those we have tried before. Contact Jean VK5TSX or Tina VK5TMC for more information.

The day of our luncheon at Firle

was Bev VK6DE's birthday, so we are seen to be toasting her health. Bev is particularly pleased about the use of EchoLink. Living in Western Australia there is no way she can hear or be heard on 80 m but she can join in very well through EchoLink.

## I visited Melbourne

At the beginning of February my son had a significant birthday, so I went to Melbourne to help him celebrate it. He has only recently got his amateur licence so on the Saturday before his birthday we went to Bayswater for



Photo 2: CWA article, courtesy CWA.



Photo 1: Raising our glasses to Bev Hebiton OBE VK6DE. L to R Christine VK5CTY, Marilyn VK5DMS, Jenny VK5ANW/3WQ, Jean VK5TSX, Tina VK5TMC, Denise, Shirley VK5YL and Jenny VK5FJAY.

him to pick up his new Yaesu rig. Fortunately Bayswater was in the same direction as the VK3 ALARA luncheon at the Grand Hotel in Yarra Glen, so my son and I continued on and he shared our luncheon.

There were eleven ALARA members with a number of OMs there that day. The venue was very pleasant and the food was good but the company was excellent. Some of the ALARA members were familiar to me but I enjoyed meeting some of the very new ones, as well. Like so many good food venues, it was rather noisy but that is usually a sign of a popular place to meet (See photo in AR March).





Photo 3: 11 year old Christine Benz (nee Gehling) doing lessons circa 1954, courtesy of Alice Springs School of the Air.

### A copy of an article written by Lyn VK4SWE for "RUTH"

RUTH is the name of the magazine printed by the CWA and distributed to all members. The article is reprinted here with permission from Lyn and from the CWA.

### VK3 news EMDRC Hamfest

On Sunday 28 February, ALARA was busy in the Kitchen at the EMDRC Hamfest. We had an ALARA table at the entrance to the hall and met many friends both

old and new. Jean had a win in the raffle. Jean thanks all the helpers and we all hope that John VK3DQ gets better soon.

### Tuesday Net

Jean VK3VIP runs the Tuesday Net on RMM 147.250 at 7 pm for ALARA members and Jean loves to hear from us all.

### Next VK3 ALARA Lunch

The next Lunch is in Bendigo on 2 April 2016 at The Farmers Arms Hotel, 1027 Mclvor Highway, Junortoun 3551 at noon with lollies, steam engines, radio and much more for afters.

### A plea for news

Please, if you participate in any interesting activity or know of an YL who has done so, please pass the information on to me, Christine VK5CTY or to Kaye VK3FKDW for the ALARA newsletter (Next due 15 March 2016).

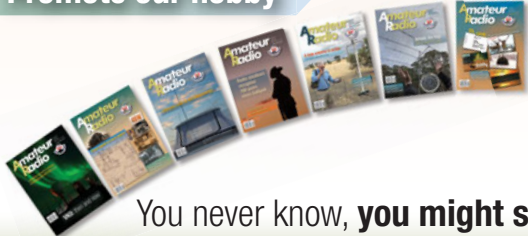
Join us on EchoLink and/or 80 m – see above.

*Editor's Note: Apologies for the gremlins last month: None of the proof reading team noticed that two of the photographs had their captions swapped. We shall try to be more vigilant in the future.*



Photo 4: ALARA table at the EMDRC Hamfest. Back L to R: Susan VK3Fuzzy, Susie VK3FSUZ, Margaret VK3FMAB and Jean VK3VIP. Front: L to R Kaye VK3FKDW and our spritely Elsie.

### Promote our hobby



### Have you considered using your unwanted **Amateur Radio** magazine to promote the hobby and the WIA?

Consider taking it to the office of the your local health professional (doctor, dentist, etc.).

You never know, **you might stimulate someone** to consider taking up our hobby!



# Ross Hull Memorial VHF-UHF Contest 2016: Results

John Martin VK3KM - Contest Manager

Congratulations to the top scorers: Brian Farrar VK2AH (overall winner); Rex Moncur VK7MO, Gavin Brain VK3HY, and top scoring Foundation class entrant Jason Dickens VK2FLJD.

Call	Name	50 MHz	144 MHz	432 MHz	1296 MHz	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	24 GHz	47 GHz	TOTAL
<b>Section A: Analog modes, best 7 days</b>												
VK2AH	Brian Farrar	1686	231	150	-	-	-	-	-	-	-	2067
VK2BLS	Darrell Harman	1642	156	145	112	-	-	-	-	-	-	2055
VK2ARA	Ted Thrift	1312	165	160	96	-	-	-	-	-	-	1733
VK7MO	Rex Moncur	-	126	715	600	-	-	-	-	-	-	1561
VK3ECH	Rob George	208	336	345	176	-	-	-	-	-	-	1065
VK6ADI	Barrie Burns	782	27	-	-	-	-	-	-	-	-	809
VK5DF	Daniel Flakelar	98	153	205	248	50	50	-	-	-	-	804
VK2YW	John Eyles	158	228	175	-	-	-	-	-	-	-	561
VK2XIC	Rob Heyer	170	57	90	72	-	-	-	-	-	-	389
VK2FLJD	Jason Dickens	-	177	165	-	-	-	-	-	-	-	342
VK2IUW	Hilary Bridel	188	60	35	-	-	-	-	-	-	-	283
VK2FIAC	Boyang Yan	-	6	-	-	-	-	-	-	-	-	6
<b>Section C: Analog modes, best 2 days</b>												
VK7MO	Rex Moncur	-	6	715	368	-	-	-	-	-	-	1209
VK3ECH	Rob George	208	336	345	176	-	-	-	-	-	-	1065
VK2AH	Brian Farrar	646	153	40	-	-	-	-	-	-	-	839
VK5DF	Daniel Flakelar	98	153	205	248	50	50	-	-	-	-	804
VK2BLS	Darrell Harman	636	33	45	32	-	-	-	-	-	-	746
VK2ARA	Ted Thrift	532	30	50	32	-	-	-	-	-	-	644
VK6ADI	Barrie Burns	492	9	-	-	-	-	-	-	-	-	501
VK2YW	John Eyles	90	135	110	-	-	-	-	-	-	-	335
VK2XIC	Rob Heyer	152	30	45	32	-	-	-	-	-	-	259
VK2IUW	Hilary Bridel	168	51	35	-	-	-	-	-	-	-	254
VK2FLJD	Jason Dickens	-	102	40	-	-	-	-	-	-	-	142
VK2FIAC	Boyang Yan	-	6	-	-	-	-	-	-	-	-	6
<b>Section B: Digital modes, best 7 days</b>												
VK3HY	Gavin Brain	492	996	-	-	-	-	-	-	-	-	1488
VK7MO	Rex Moncur	-	1011	140	48	-	-	-	280	-	-	1479
VK2IUW	Hilary Bridel	306	-	-	-	-	-	-	-	-	-	306
<b>Section D: Digital modes, best 2 days</b>												
VK7MO	Rex Moncur	-	237	140	-	-	-	-	280	-	-	657
VK3HY	Gavin Brain	168	351	-	-	-	-	-	-	-	-	519
VK2IUW	Hilary Bridel	178	-	-	-	-	-	-	-	-	-	178

It is pleasing to be able to report increased activity this year, especially in VK2. But - still vast room for improvement!

One feature of the results is that the scores for 6 metres are much higher than those for any other band. The present 6 metre scoring formula was adopted in 2010, when operating conditions were poor. But now, the 6 metre scores are outweighing the scores on all other bands combined. This is a disincentive for contest activity on 2 metres and higher bands. So it is time to swing back to the kind of scoring formula that applied up to 2009. Under this formula, the normal 1 point per 100 km still applied for contacts up to 1000 km. But for contacts above 1000 km, which are predominantly sporadic E or F2 contacts, scoring limits applied. This made the scoring potential of 6 metres far more equal to that of other bands. Details of what is proposed for 2017 are in the 2017 draft rules on the contest web page.

**Contest web page:** <http://www.wia.org.au/members/contests/rosshull/>



# VK4news The Tableland Radio Group

Mike Patterson VK4MIK

## World Radio Day 2016 at Bush Telegraph Centre Cardwell 13/2/2016

The Tableland Radio Group was asked by the Bush Telegraph Centre if we could assist with doing the above event at the Bush Telegraph Centre at Cardwell - Northern Queensland. We initially found out about the UNESCO sponsored event and its aim etc.

The theme this year was *Radio in times of Emergency and Distress*, which caught our attention as the North Queensland area has been impacted by several major cyclones and flooding in recent times.

We looked at a display of radio equipment which was used by the military plus commercial transceivers and a modern transceiver - which was used to get contact post Cyclone Larry when mains power and telecommunications were lost and roads were cut. We also looked at the museum display as well.

We contacted Radio Station 4KZ/4AM/4AY manager Mr. Al Kirkton VK4FFKZ, who immediately offered assistance with PR and also organised a "live to air" interview on

the day. He was important as it gave the event wide PR coverage.

The Museum Coordinator Thea was terrific as she got approval from Cassowary Coast Shire Council, who also did PR for the event and had a large shelter put up for the day. During our discussions we looked at the organisations that use radio and Thea managed to get the Queensland Fire and Emergency Service to bring a mobile command vehicle with staff to set up a sat link and show its equipment - which was quite technically impressive.

On the day we had amateurs coming from the Atherton Tablelands, Innisfail, Cardwell, Ingham, Mt Fox and Townsville areas. Martin VK4FMJR and partner Gelle brought down a large collection of ex-military radios and Mario VK4MS, assisted by Clyde VK4FCRH, Jeff VK4AJH and Mark VK4FMAR, brought some of his extensive collection of receivers both military and commercial.

Gavin VK4ZZ and Lyndal VK4ZM brought along an interesting Morse key that was the basis of some recent research. Also from Townsville were Richard VK4FRJG and John VK4JPA.

As an aside, the museum's teleprinter was "playing up" and Thea asked if any of us knew how to effect repairs. Both Ross VK4AQ (ex-RAN WO), and Gavin VK4ZZ (ex-OTC Radio Operator) had operated same and quickly got it functioning properly again. One can but wonder about the probability of having two persons with knowledge of the teleprinter operation being "in situ".

The "live to air" interview on Radio 4KZ was an enjoyable experience as Al had briefed the staff at 4KZ previously and they greatly assisted the interview by guiding the process with their knowledge on the support given both pre and post Cyclone Tracey, Larry and Yasi, to name but three of the major cyclones. It was highlighted that amateur radio played a vital role immediately post Cyclone Tracey when all normal communications were damaged and inoperable and amateur radio got the message out that Darwin had been badly affected. We also made mention of the Coastguard, which uses radio to rescue those at sea 24/7, the SES and military etc. In reality radio is vital in times of emergency and distress as it is used to give public advice, help morale plus render assistance to the populace and the support services can do surveys, get medical help and advice on infrastructure status which can be passed back to command centres.

There were only three listed sites in Australia for the event and we were very proud to be a part of one of those publicising the *Role of Radio in Emergency and Distress* as it gives amateur radio a good PR opportunity and explains how it has a history of assisting in time of need.

73

Mike Patterson VK4MIK



Left to Right: Dennis VK4JDJ, Gelle, Martin VK4FMJR and Richard VK4FRJG.

# Archive Donations

I apologise for not acknowledging the receipt of donations for some time and wish to thank the following for their donations to the **WIA Archive**:

- Heather, Daughter of Len VK3KW, for reference books and other paper work.
- Merv VK5MX for a copy of Australian magazine, Radio Realm (1934).
- John VK5EMI for a selection of Call Books.
- Christine VK5CTY for a number of reference books.
- Rob VK5RG for a collection of material relating to his Antarctic and other involvements.

In addition, a number of members have sent in photographs and other material relating to the series of ANZAC articles published in *AR*. Most of this material has been added to our Archive listings.

On behalf of the Institute, thank you all.

**Peter Wolfenden VK3RV**

*WIA Historian,*

For WIA History and Archive Committee

# TET-EMTRON

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## VK7news

Justin Giles-Clark VK7TW

e [vk7tw@wia.org.au](mailto:vk7tw@wia.org.au)

w [groups.yahoo.com/group/vk7regionalnews/](http://groups.yahoo.com/group/vk7regionalnews/)

### VK7 ALARA News

Linda VK7QP lets us know that ALARA's mission is to encourage women's interest and active participation in amateur radio. If you are a woman with an interest in amateur radio, whether you have a licence, are studying for one, or even if you have not considered getting a licence, you may like to contact women with similar interests. Linda VK7QP has recently taken up the role of state representative in Tasmania (VK7) and while there are only a handful of ALARA members in VK7, these members are spread across the State so there is likely to be someone near you with whom you can make contact and have a chat. There is also a weekly national net where you can contact other

members and ALARA also holds a contest in August each year. If you are a woman who would like to get in touch with other women with an interest in amateur radio, you can find more information on the ALARA website <http://www.alara.org.au/> or contact Linda VK7QP at [vk7@alara.org.au](mailto:vk7@alara.org.au) Thanks Linda.

### VK7 QSL Bureau

Herman VK7HW, WIA VK7 Inwards QSL manager, asks all VK7 Club Secretaries to send through an up to date list of callsigns of their club members so he can distribute Incoming QSL cards easier to each club. Those amateurs who have prepaid for direct mail out of their QSL cards please contact Herman as well to confirm your details and update your status. Herman has

recently received a huge shipment of cards and these are currently being distributed.

### Repeater News

VK7RAA has now been operating from its new location on Mt Arthur and work is continuing on installing the 6 m and 70 cm repeaters and APRS digipeater. Smart Mute has been installed on the receiver and a reminder that given this repeater is solar powered, the repeater powers down to save standby current. To activate after two minutes of inactivity you need to give your callsign to activate the repeater. Please note a quick button push will not turn on the repeater. Thanks Joe VK7JG.

*Panorama on Mt Zero (VK3/VW-020) looking across to Flat Rock during a recent activation (photo courtesy of Justin VK7TW).*



## North West Radio and Television Group (NWTR&TVG)

<http://www.vk7ax.id.au/atvgroup>

Severe storm damage including a direct lightning strike at the home of Jim VK7JH affected power, internet and computer linking of VK7RTV to VK7RDR and VK7RAK. Jim's QTH is also the home of the VK7RTV 2 m Repeater and it fortunately received no damage.

At the 2016 AGM the following Committee was elected: President Tony Bedelph VK7AX, Vice President Lucas Bryan VK7LSB, Secretary Steve Bush VK7EQ, Treasurer Ursula Roos VK7FROO and Committee Member David Sturges VK7VDS. It was moved and unanimously passed that the Club's Name be changed from North West Tas. Amateur Television Group (NWT-ATVG) to the North West Tas. Radio and TV Group (NWTR&TVG).

## Northern Tasmanian Amateur Radio Club (NTARC)

<http://www.ntarc.net/>

Congratulations to Andrew De Water VK7FADW, Pat Taylor VK7FPLT and Peter Gee VK7PTG who all passed their assessments

recently. Please make them welcome when you hear them on air.

At the 2016 NTARC AGM the following committee was elected: President Idris VK7ZIR, Vice-President Peter VK7KPC, Secretary Yvonne VK7FYM, Treasurer Andre VK7ZAB and Kevin VK7HKN as committee member.

## Radio and Electronics Association of Southern Tasmania

<http://reast.asn.au/>

There is continuing interest in the Hobart Area 23 cm QSO Party after the broadcast each Sunday. New stations continue to appear and signal strengths are improving with the new 23 cm Yagis being built and new transverters being fired up. The 2016 REAST AGM saw the following office holders elected: President Ben Short VK7BEN, Vice-President Justin Giles-Clark VK7TW, Secretary Sean Lincolne VK7FAZE, Treasurer Alan Jeffrey VK7KAJ, Committee members Barry McCann VK7TBM and Larry Hower VK7WLH.

Our DATV Experimenter's nights during February have been a mixture of show and tell nights and DATV evenings covering a diverse

range of items including:

Bushcomm stainless dipole antenna issues thanks Ben VK7BEN,  
23cm QSO party findings, Hepburn charts, Doppler shift, VK3UM SK tribute thanks Rex VK7MO,  
Martin VK7MA built and showed the VK5JST HF/VHF antenna analyser, thanks Martin,  
Alan VK7KAJ showed his new 23 cm Bulgarian Transverter thanks Alan,  
Pico balloon updates, History of Yagi & Uda, Li ion battery packs, antenna sweeping, SPi boxes, miniature voltmeters and SOTA Activations and BBQs.

Our videos have included 1000 km in seven minutes, Ham Radio Now, KF5OBS educational, Amateur Logic TV, NSW Fire RAFT teams in NW VK7, Morse code, woodworking and much more. These nights happen each Wednesday night and are streamed via the batc.tv service – look for VK7OTC.





## The Amateur Dream by VK7KBG

There is movement at the station and the word is getting 'round  
That the missing skip, at last, is on its way,  
The bottom of the cycle has lasted years and years  
Now the curve is coming up and Hams can play.

The Amateur fraternity, intelligent and suave,  
Love to tell the other Hams what radios they have,  
They speak a language all their own that's hard to comprehend,  
Some burn the midnight oil and send the family 'round the bend

When the bands are open and the skip is flying in,  
To miss that hallowed opening would be a mortal sin,  
There's nothing else quite like it when you're crying out CQs  
And some get their Dutch courage with a little drop of booze.

Most Amateurs are mannerly and very circumspect,  
You'll never hear them raise their voice or rudely interject,  
But sometimes one gets pushed too far and then it hits the fan  
The air turns blue with adjectives that shame a working man.

A station down in New Orleans, he sounds like he's in heaven,  
The way he's talking one would guess he's had an 807,  
A breaker interjects and says, "Your language is too rife,  
Shut up, or else, I'll smash your rig and then I'll kiss your wife".

You're 5 and 9 there's QSB, I'd like a QSL,  
There's QRN and QRM but I still hear you well,  
The hieroglyphics fly about like manna from the heavens,  
And even when they're fading out, "I've got you 5 and 7's".

The pounding brass, the dits and dahs are music to some ears,  
A language that some OM's love and brings them close to tears,  
To younger hams that aren't convinced, they think Morse brings disaster,  
The quicker that one sends it out, it always comes back faster.

The YL's, yes we love them, with their voices high and thin,  
That sometimes it's impossible to finely tune them in,  
Chauvinistic comments, these days are wearing thinner,  
So if you say the wrong thing, you're sure to wear your dinner.

But nowadays AR means more than pounding on a key,  
There's slow scan, packet, satellites and more for you and me,  
Computer buffs are telling us that radio's "old hat",  
And if you want to find them, they'll be on the internet.

But don't despair, all is not lost, our hobby will not die,  
The old and new are joining up to let us reach the sky,  
Old ways die and make a path for youngsters in the know  
And Amateurs will always love their black box radio.

*(Written by Bill Gwynn VK7KBG)*



## SOTA & Park News

*Allen Harvie VK3ARH*

February was a month of activities.

Congratulations to Peter VK3PF on achieving 2000+ Activator points or double Goat plus 20000 Chaser points and to Ron VK3AFW for Super Sloth status (10k+ Chaser points). With four years of SOTA in VK3 and over three years for VK5 and VK1, the points will add up but again good operators always achieve excellent results. Both are an example of what persistence and patience can deliver.

### VK3 SOTA Conference – From Ron VK3AFW

The 2016 Annual Melbourne SOTA Conference for 2016 was held at the Club rooms of the M&DRC at 33 Turner Rd., Highett on Saturday 13th February. The room was packed with about 25 people in

attendance – some heads may not have been counted due to their presence in the kitchen topping up on tea, coffee or biscuits.

Presentations began just after 10 am and concluded just after 1 pm. Here is a very brief summary. The full presentations will be posted on the SOTA Australia Yahoo site in due course.

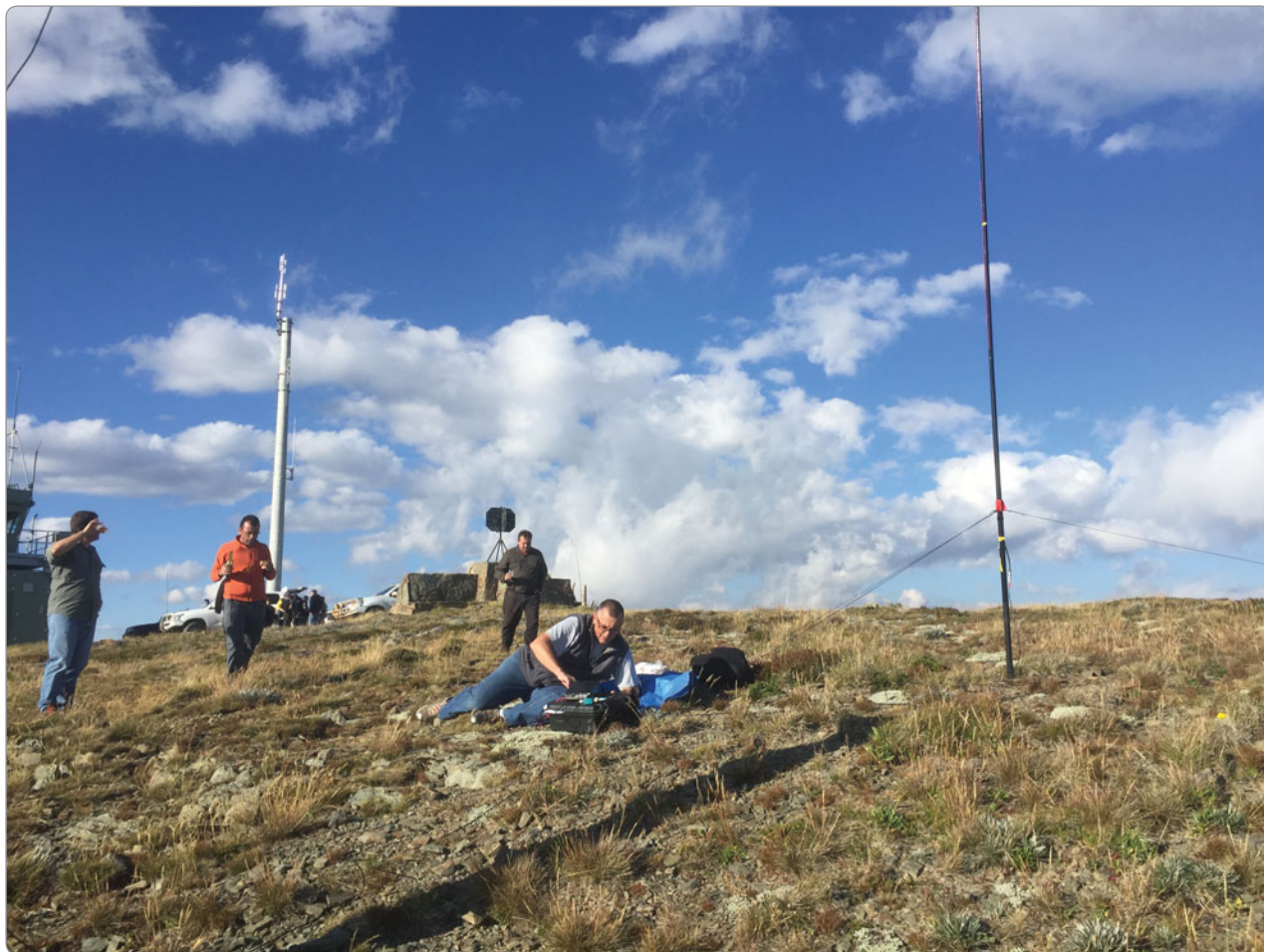
The conference was pitched toward the newcomer to SOTA and QRP field operation. It was good to see that there were some potential new participants in attendance. Glenn VK3YY got the show moving with a comprehensive presentation titled "Introduction to SOTA". The basis of SOTA as an outdoor radio activity and the general rules were well covered. Next was a review – "SOTA in VK and VK3 over the

Last Year" by Wayne VK3WAM. Informative as always it showed some aspects of SOTA were stabilising with SSB still being the preferred mode although CW operators were well in evidence. In spite of declining conditions, 40 m was the main band of choice.

Glen returned with a neat presentation on some homebrew equipment, notably a 40 m transceiver weighing no more than 300 g, 5 W out of CW or SSB and drawing no more than 50 mA on receive. He also described a lightweight 10, 12 and 15 m 25 W amplifier weighing less than 500 g. He used this with an FT-817 to work into VK during overseas SOTA activations.

No SOTA activation or chase goes well without some computer/





*Andrew VK1AD on VK3/VE-006 trying to chase Herbert OE9HRV. His HF station was about to be set upon by cheese eating, champagne driven activators.*

phone tools. We were treated to a “SOTA Tools Update” by Allen VK3ARH. Knowing who is on and where helps both Activator and Chaser.

Next came a discussion by Ron VK3AFW on some cheap SOTA CW transceivers (\$3 to \$50) available in kit form off from China and the US, titled “Boulders, Rocks and Rockmites”.

The newcomer should realise that there is more to a rig, a battery and aerial system required to make a successful and safe activation. Tony VK3CAT made an open presentation titled “SOTA Essentials”. He spoke about trip preparation, getting there, what to carry and expecting the unexpected. It’s about risk reduction.

This year we were privileged to have a member of the SOTA management Team make two presentations. The first was “Mapping for SOTA” and the second “Activating Overseas” both by Andrew VK3ARR. Andrew explained how a new SOTA Association is mapped with the new Association Manager being provided with a list of candidate peaks for checking. We were given an overview of the automated technique used to make the selection. Andrew’s tales of SOTA activations attached to business trips are never boring and he had some useful tips for intending travellers.

The BBQ sausages expertly cooked by Tony VK3CAT did not last very long.

A number of interesting discussions took place over the

next couple of hours with people gradually heading for home.

To Ron VK3AFW who organized the entire gathering, and to Ken VK3KIM for helping run the show and cleaning up afterwards, a big well done & thanks!

## WWFF

Paul VK5PAS has added another 27 VK7 locations to WWFF bringing the total for VKFF to 1152. These new parks are not National Parks but Conservation Reserves and State Reserves that were not included in the initial mapping. More locations mean more activation sites and more reasons to plan a trip to VK7.

## 2016 Hotham Gathering

February saw what may not be the first example of such an event,

but will definitely be the reference for future events. In this case, the Hotham SOTA Gathering. Initially raised in November 2015 by Brian VK3MCD, where he proposed a weekend of SOTA activating based at a ski lodge at Hotham out of season.

Many jumped at a chance to spend a couple of days surrounded by SOTA tragics and high value summits. We had six Mountain Goats and eight Shack Sloths for the weekend including: Tony VK3CAT, Glenn VK3YY, Compton VK2HRX, Ron VK3AFW, Adan VK1FJAW, Peter VK3PF, Andrew VK1AD, Andrew VK1MBE, Rob VK2QR, Ken VK3KIM, Adam VK3AGD, Alan VK3FABT, Allen VK3ARH and Brian VK3MCD.

There are over 30 summits within 30 km of Mt Hotham and Brian had identified 14 target summits worth considering, all worth 8 or 10 points. Activators were spoilt with choices!

Many of the summits would be located in the Alpine National Park,

so qualified for WWFF activations as well as SOTA.

The density of activity on Saturday morning most of us were within line of sight/rubber ducky range. Chasers reported poor conditions on HF but summits were being qualified on 2 m by multiple operators just on S2S contacts. Propagation, always crucial for contacts, is of great concern for low powered remote portable operations.

Highlight was the sunset activation of Mt Hotham VK3/VE-006 with Champagne and cheese. Not my normal mode of activating.

Car-pooling allowed activators to access summits normally beyond their reach. Personally I picked up nine peaks, which was a real bonus for me. I am used to spending all weekend chasing remote low scoring summits; these high value activations were welcome. Thanks to Tony VK3CAT for the transport, as many of the roads were beyond what I would tackle with my Subaru.

I enjoyed meeting many

activators whom I'd worked but never meet. It was worth the effort just for that alone. Great weekend, great food, great people, lots of fun will definitely be up for another one!

Again, a very big thank you goes to Brian VK3MCD and Kathy for all their efforts. Thanks also to everyone who participated, whilst the ionosphere disappointed. The atmosphere was excellent all weekend.

Keep your eyes open for some announcements for the next gathering – likely to be in southern NSW in October.

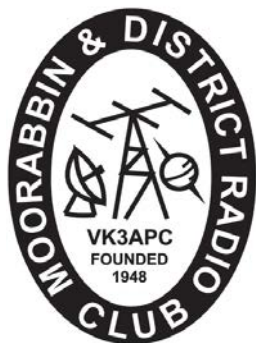
Gerard VK2IO/JR2YFM braved the snow to activate JA/SO-120. A video from the activation of Udoyama **JA/SO-120**: <https://www.youtube.com/watch?v=qx3L6lUI97I>

Overall, a busy short month.

Send input to for inclusion to next months' column to: Allen VK3ARH: [VK3ARH@wia.org.au](mailto:VK3ARH@wia.org.au)

Until next month, remember a slow CW contact is still a contact.

73 & 44,  
Allen.



Melways Reference **80 F4** (Enter via Huxley Ave off Police Rd.)



## Moorabbin and District Radio Club - VK3APC

PO Box 58 Highett 3190

# Saturday 7th May, 2016

# HAMFEST 2016

**Location – Southern Community Centre - Rupert Drive, Mulgrave**

- \* GREAT VENUE
- \* PLENTY OF SPACE
- \* MELBOURNE'S BIGGEST
- \* MAJOR AND MINOR DOOR PRIZES

The Moorabbin & District Radio Club have much pleasure in inviting you to participate in

### VK3's BIGGEST ANNUAL HAMFEST

Snacks and hot food will be available – FREE TEA & COFFEE!

Talk in via 439.900 MHz 70 cm VK3RSE.  
PRIZE DRAWS: Every entry ticket goes into the draw & additional tickets on sale.

SALES: NEW & USED - Importers and suppliers of amateur equipment & accessories. Preloved ham gear & accessories, PCs & bits & pieces.

### ENTRY ONLY \$7.00

(Doors Open 10 am – entry tickets on sale prior) (INCLUDES FREE DRAW IN THE MAJOR DOOR PRIZE)

Tables available at \$20 each, (1.8m long) includes lunch voucher.

Please contact:

Lee Moyle VK3GK. Tel: BH/AH  
(03) 9705 1051 Email: [vk3gk@aanet.com.au](mailto:vk3gk@aanet.com.au)

Graeme Lewis VK3GL. Tel AH:  
(03) 9702 1199 or Mobile (0418) 171601  
Email: [vk3gl@bigpond.com](mailto:vk3gl@bigpond.com)

# Silent Key

Doug McArthur VK3UM

Born in Adelaide, Doug lived his boyhood years with his mother in Francis St, Fullarton. He attended Unley High School where he met up with Brian Endersbee VK3WP, Frank Choate VK5CVZ, John Drew VK5DJ, Brian Tideman VK3BCZ and John Hilditch VK5ZEP. Lunchtime discussions centred around amateur radio on the 1 metre Band (288-296 MHz). None of the above had licences at the time but used self-allocated calls. Doug was soon on air, as were his friends. Many happy hours were spent with their superregen receivers and modulated oscillator rigs. Doug took part enthusiastically in the push bike mobile activities of the group. Foxhunts in National Park Belair and Brown Hill creek were a regular activity. Doug studied hard, mostly with the ARRL Handbook and gained his full licence VK5KK in 1958. He then added 6 metre operation where he worked many JAs from his home in Fullarton. AM VHF activities or CW became his specialities at that time. CW remained a preferred mode for his later experiments with moonbounce. His first taste of high power was when he was involved in the operation of a WIA high power demonstration station near the roof of John Martin's Retail Store in Adelaide.

Doug joined the PMG as a new recruit and gained his technical training with them. With his new wife Bev, he was posted to Alice Springs where he became much sought after as VK8KK. There was one infamous occasion when Doug managed to cause TV in Melbourne during one band opening on 6 m. Doug worked on the High Frequency Radio Subscriber Installations for Cattle Stations while based in Alice Springs.

Later Doug and Bev moved to Darwin where he assisted with the establishment of a new relay station for Radio Australia. Doug was involved with both the transmitter and receiving side



of the station at various times. There he met a number of amateurs including Max Chadwick, Barry Williams, Barrie Burns and Brian Dodgson. Max and Doug also had a connection through baseball – Doug's sport of choice.

There were unconfirmed rumours that on one or two occasions it was possible to retune the 200 kW transmitter to the amateur bands. Clearly the power would have been turned down.

Cyclone Tracey hit Darwin on Christmas Eve in 1974 while Doug was on holidays in Adelaide. He immediately returned to Darwin with Gary Herden's FT-101 under his arm to establish communications with the outside world through amateur radio. Official communications had been damaged by water.

Doug and his family setup home at Chirnside Park in Melbourne following a job offer by PMG/Telecom. It was at Chirnside Park that Doug built his first EME station on 2 m and 70 cm. He soon became a highly sought after station by the Europeans, North Americans and Japanese. His multiple Yagis for EME and terrestrial work performed extraordinarily well.

Later, the radio noise at Chirnside Park gave Doug and Bev a reason to move to rural Glenburn northeast of Melbourne.

They named the property "Tikaluna" (it's an anagram – think about it – Doug's sense of humour). He then set about purchasing the 8.6 metre dish, owned by Telstra and located at One Tree Hill. Moving and installing it was quite a saga, interrupted by a stroke in late 1999 the day before he retired.

Undaunted, in characteristic fashion, Doug worked at recovering with the help of family, and commissioned the big dish in mid-2001. His first QSO with it was on 432 MHz on 26 July, with Peter SM2CEW.

As a result of his EME work, Doug developed an interest in dish feeds and calculations for tracking, libration and other related matters. His software became widely acclaimed, especially by the EME operators. His programs such as EMEcalc, EMTrack, Libration Calculator, EMEplanner etc are used worldwide by radio amateurs. His programs were always freeware and distributed from his website: [www.vk3um.com](http://www.vk3um.com)

His EMR Calculator, developed in cooperation with the ACMA and the WIA, became a relied upon program to help keep amateurs safe from radiation.

Doug became well known as a presenter at numerous EME conferences overseas, the WIA AGM in Darwin and many presentations at GippsTech where his sense of humour shone through, usually at the expense of his mates.

Doug received the Ron Wilkinson Achievement Award on two occasions.

He died of a stroke on Monday 22 February, despite medical intervention. He will be sorely missed by his mates across the world. Our condolences go to his wife Bev, his daughter Cheryl and his son Peter and the five grandchildren.

Vale Doug VK3UM.

John VK5DJ

4 March 2016



## Contributions to Amateur Radio

*Amateur Radio* is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication.

Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.



Jim Linton VK3PC

[e arv@amateurradio.com.au](mailto:arv@amateurradio.com.au)

[w www.amateurradio.com.au](http://www.amateurradio.com.au)

## Repeaters work program

Amateur Radio Victoria is arranging the complete re-build of the Mt Wombat VK3RGV repeater site near Shepparton. This involves the replacement of the old guyed tower with a new self-supporting structure. In addition to the tower, equipment racks are to be fitted to accommodate replacement Tait base stations and new antennas at an estimated cost of \$3,000.

Acknowledgement is given to Southern Cross Austereo for arranging the tower replacement and the **Shepparton and District Amateur Radio Club** who maintains the site on our behalf.

In other repeater work by Amateur Radio Victoria:

VK3RML upgraded with a new antenna and base station. Please note 91.5 Hz tone needed to access this repeater.

VK3RGV new tower installed and waiting for new equipment fit-out in the building. New antennas have been purchased, and service interruptions can be expected as they are installed.

VK3RBO DATV transmitter is operational. Frequency is 446.500 MHz DVB-T Standard Definition QSPK modulation. More information is at: <http://vk3ce.homeip.net/>

VK3RWZ antenna relocation with possible service interruption while this takes place.

VK3RWL new antennas have been purchased and delivered.

## Portable Show 'n Tell

Those interested in portable activity should head for a very enjoyable



*Mt Wombat repeater site new mast to replace old guyed one.*

morning at the Brisbane Ranges National Park this month. An operating station VK3WI will be on site giving an opportunity to gain points in the Keith Roget Memorial National Parks Award.

The station will be set up and demonstrate first hand operational and logging methods.

It all starts at 10 am on Sunday 17 April. There will be a Show 'n Tell session with information and displays of gear for use in a variety of activities including KRMNPA, SOTA and ILLW.

Among those helping with it are Peter VK3ZPF, Allen VK3ARH, Joe VK3YSP, Julie VK3FOWL and Tony VK3VTH.

This will be followed by a free

sausage sizzle at midday, where all can socialise and discuss portable activations. To help cater for all, and details of the exact all-weather site to be used, a register of those to attend is being gathered.

All inquiries about the Show 'n Tell are welcome and should go to Tony Hambling VK3VTH at [vk3vth@amateurradio.com.au](mailto:vk3vth@amateurradio.com.au)

## Foundation licence weekend

The entry level Foundation licence is the most popular way of getting into amateur radio and for quality training and assessment at Ashburton, April enrolments are about to close.

Amateur Radio Victoria is a leader in education, having last month held a successful bridging course for the Standard licence,

run by experienced trainer Kevin Luxford VK3DAP ZL2DAP.

The Foundation licence the study and practice guide book is available as a mail order for \$35 from our online shop [www.amateurradio.com.au/shop/](http://www.amateurradio.com.au/shop/)

To enrol for the Foundation licence session on April 9-10, or learn more about these held at the Amateur Radio Victoria office 40g Victory Boulevard, Ashburton, contact Barry Robinson VK3PV [foundation@amateurradio.com.au](mailto:foundation@amateurradio.com.au) or 0428 516 001.





# VHF/UHF - An Expanding World

David K Minchin VK5KK

## Introduction

Hello again. This month we have a variety of things so let's get straight into it.

Activity reports start with Colin VK5DK reporting on the Perth 144 & 432 MHz tropo opening that extended from Melbourne to Perth. Whilst most of February saw less than ideal propagation, the over the land tropo opening to Perth was just one out of the box!

February also saw the 3.4 GHz QSO party with no less than 47 operators on the 9 cm band at the same time across VK and ZL. Surely this will become a regular event!

This month's technical corner we start the Software Defined Radio (SDR) for VHF series and Kevin VK4UH continues his excellent introductory guide for beginners on meteor scatter operation.

## Silent Key: Doug McArthur VK3UM

It is with great sadness that this column records the passing of Doug McArthur VK3UM on 22 February 2016. Aged only 74 years, Doug had been an active VHFer for 60 years, firstly as VK5ZDA (then VK5KK) from Adelaide, VK8KK (Alice Springs and Darwin) and then as VK3UM in Victoria for the past 40 years.

A WIA member for 60 years, from the SA VHF Group through to his EME activities right up to his death, Doug contributed immensely to the advancement of our VHF hobby with a passion and technical prowess that was second to none. Often reported in this column since the late 1960s, Doug's achievements will stand for many years on a global level. His selflessness in providing assistance

endeared him to many. Vale Doug.

## 144/432 MHz tropo to VK6 - Perth

Early February the East/West VK6 path finally showed some "old form" with a typical summer pattern evolving over a few days. Colin VK5DK from Mt Gambier was right amongst the opening and reports:

*"Over the last few weeks propagations from Mt Gambier to Western Australia had been looking very promising according to the 'Hepburn Charts' and although the VK6RST 144.564 MHz beacon was being heard, the signals were not extremely strong, although VK3AXH, VK3II & others to the East of Mt Gambier were better suited with reasonable contacts on 144.100 MHz into the Albany area.*

*On 8 February, I was able to work Brian VK6WG (Wally his late father's old call sign) at 5 x 1 at 0923 UTC then around two hours later contacted Rob VK6LD/R at 1136 UTC on 144 MHz at 5 x 9 then on 432 MHz at 5 x 9 as well. During the evening conditions to the North East and East were reasonable as well with a good 5 x 9 contact with Leigh VK2KRR on 1296 MHz plus contacts into Gippsland on 144 MHz with Ralph VK3WRE and Brian VK3BBB, and concluding the evening with VK6PII/R using Rob VK6LD's remote station in Albany.*

*The following morning conditions were better from Mt Gambier to Albany with contacts again to Brian VK6WG at 2150 UTC and also a contact with VK6VOX at 2125 at Katanning inland and closer to Perth plus contacts with Mark VK2EMA (Tottenham) VK3AFW, VK3BNJ, VK3BBB, VK3II*

*& VK3WRE all on 144 MHz.*

*On 11 February (10 Feb UTC day), although conditions didn't appear very good to Albany both Gary VK5JR and myself were able to work Phil VK6ZKO in Perth on 144 MHz and at 2310 Gary VK5JR contacted Andrew VK6IA with signals up to S7. Also both Gary VK5JR and myself made contact on 432 MHz with Andrew at 2316. I later contacted Andrew on 144 MHz at 2330 UTC. During the opening to Perth both the Perth beacons on 144.460 MHz & 432.460 MHz were heard at this QTH.*

*Contacts with Gavin VK3HY on 144 MHz at 5 x 9 and Brian VK5BC/P at Corny Point were made on 144 MHz and 432 MHz with some coastal ducting on the 12<sup>th</sup> (11<sup>th</sup> UTC day) at 2136 and 2142 UTC with excellent signals on both bands.*

*Most mornings during the year around there are several stations mainly from Mt Gambier, Ballarat, Gippsland, Stawell, Cobram, Caramut and some Melbourne stations check out propagations around 2115 to 2145 UTC on 144.100 MHz to 144.150 MHz, after daylight saving time ends, we revert to 2215 to 2245 UTC time, which is the same local time."*

*An over the land tropo path to Perth on 144 MHz let alone 432 MHz isn't exactly an annual event. The longest reported contact was between VK6IA and VK3XPD (2739 km) on 144 MHz, 12/2/2016 @ 0020UTC. At the same time tropo was prevalent in ZL with contacts extending out to 600 km. Attempts were made at 10 GHz during this period between VK5, VK6 and VK7, but conditions were not suitable.*

00:22 12-Feb	VK3XPD	> VK6ZKO in OF88AA on 144.100.0 SSB 53 > QF22ND @ 2721.5km 275° Many Thanks - Alan
00:21 12-Feb	ZL1AKW	> ZL2WHO/P in RF700M on 1296.250.0 SSB 55 > RF82CG @ 212.7km 203° Mark portable Waipuna Ridge. Cheers Mark.
00:20 12-Feb	VK6IA	> VK3XPD on 144.100.0 SSB 51 > OF78WD @ 2739.3km 112° Thanks for the QSO
00:09 12-Feb	VK6/SWL1	super tropo opening Perth to Melbourne & Adelaide on FM band
00:01 12-Feb	VK3ZAZ	> VK6DZ in OF84UX on 144.490.000 WSPR -27 > QF12AG @ 2194.2km 270° REV spot thats pretty weak at 100 watts
23:59 11-Feb	ZL4OL	> ZL2BRG/P in RE78NU on 144.200.0 SSB 49 > RE54GG @ 631.1km 38° nice to hear you Simon
23:56 11-Feb	ZL3RC	> ZL2WHO/P in RF700M on 144.200.0 SSB 59 > RE66FL @ 505.2km 28° Big sig Mark and still good copy on the 5w
23:44 11-Feb	VK3ZAZ	> VK6RPH in OF88AA on 144.460.000 BCN 539 > QF12AG @ 2446.0km 277° 
23:42 11-Feb	VK3ZAZ	> VK6IA in OF78WD on 144.100.0 SSB 53 > QF12AG @ 2467.3km 277° clear as pity about line noise swl report only
23:33 11-Feb	VK5DK	> VK6IA in OF78WD on 144.100.0 SSB 53 > QF02JE @ 2361.1km 279°

Photo 1: Long distance tropo reports for 12/2/16 courtesy of VKLogger.

The band has not been open to VK6 in any significant manner in the four weeks since. This opening may well have been the last (and best) opening of a short but interesting VK6 tropo season.

### 3.4 GHz QSO Party

The 3.4 GHz QSO Party has been and gone! Roger Harrison VK2ZRH reports on activity from VK2:

*"The 3.4 GHz QSO Party certainly stirred up the 9cm aether around the Sydney Basin on Sunday morning, 21 February!*

*On Saturday morning, the 20th, Justin VK2CU called me to ask if I wanted to join him on the QSO party the next morning. He planned using the Parramatta tower block rooftop from where we'd completed a 10 GHz QSO a year or so back with Keith VK5QO/P at Leura in the Blue Mountains. Justin suggested that I bring my 9 cm DEMI transverter and give it a baptism of fire. Too right, I said. And so it was on.*

*As it was, Dave VK2JDS had emailed me the week before to see if I'd be taking part. I replied that it was unlikely. Never mind, to signal our likely attendance at the party, I completed a posting to Contest Radar ([www.contestradar.com](http://www.contestradar.com)) on Saturday.*

*Come Sunday morning, Justin called around and we loaded my gear into the back of his van. Aside from the 3.4 GHz Demi transverter, I took my 10 GHz rig (that one on the cover of AR mag in the Jan/ Feb issue) as the DEMI needs a 10 MHz reference and I could scavenge the 10 MHz output from the 10 GHz rig's Trimble GPSDO to lock the DEMI.*

*Justin took his GARC panel, his 9 cm EME rig-in-a-box and four panel antennas, ranging from a squirt about 100 mm square (ex-Unwired), up to a 1 m x 1 m panel.*

*Around the Sydney Basin, we had VK2JDS, VK2KFJ, VK2MB, VK2DAG, VK2XDE, VK2CU and myself. Gary VK2KYP pulled*

*out after a hardware disaster the night beforehand.*

*Once set up on the rooftop, we easily worked Dave VK2JDS/P at Kurrajong (QF56HL), trying out the various panel antennas, plus the*



Photo 2: 3.4 GHz portable operation at VK2MB.



*GARC rig and my DEMI hooked up to the 1 m panel. Signals ranged from 59 to 55, depending on which panel was used.*

*The GARC rig acquitted itself very well; as did my jury-rigged DEMI (Justin had to use his fingers to connect the transverter's PTT line to GND when I transmitted!).*

*The view from the rooftop revealed heavy rain from east of the Sydney CBD right around the compass through north to northwest.*

*Attempts to work the VK2MB troupe (Nick VK2FS, Geoff VK2AVR and Shannon VK2GV) at Terry Hills (QF56OH) proved too problematic with path obstructions (trees at Terry Hills, the Artarmon ridge etc.). Likewise with our attempts to work VK2DAG and VK2XDE on the Central Coast to the north, who battled through a downpour!*

*From the eastern side of the rooftop, attempts to work Steve VK2KFJ/P at North Head (QF59PE) were unsuccessful, despite the fact that the Sydney CBD and Harbour Bridge were LOS. His signal was detectable on SSB, but well down in the noise. We tried scatter from the Chatswood CBD, but results were the same. Panning the GARC rig across the Sydney CBD direction saw a considerable rise in the noise level. We also had some odd QRM working VK2JDS/P. 9cm is not a quiet band around here.*

Some sites with more promise will have to be scouted-out before the next event. Thanks to Lou VK3ALB for organising and promoting the 1st National 3.4 GHz QSO Party."

Across both VK and ZL there were a reported 9 x VK2s, 28 x VK3s, 6 x VK5s and 4 x ZLs all on 3.4 GHz at the same time. A very successful exercise that will surely be repeated again soon with the next wave of transverters being completed!

As a member of one of the participating clubs on the day I have to say that this has (and still is) one of the best club projects in a long

time. Every club meeting we have had a number of people bring along 3.4 GHz panels for modification and/or testing.

As of the beginning of March the Geelong club has now run out of the base panel assemblies but there are still many out there to be modified. If you have one (spare) and don't think you will use it, please consider passing it onto someone who will.

## **SDR – Software Defined Radio on VHF and above.**

This is the first in a series looking at SDR for VHF and above. We will start with a brief rundown on what SDR is. Future instalments will look at more specific projects and results.

The SDR acronym has been with us since the 1980s, in the time since SDR has evolved as commercial development has provided better hardware and software. The principles behind equally apply to both the reception (decoding) and generation (encoding) of RF signals. Today SDR has largely displaced traditional analogue techniques for technical and/or economic reasons. SDR is used in all manner of devices from mobile phones to those not so legal Chinese handhelds.

Evolution has brought several technical "generations" of SDR. These can be broken down into more functional groups (Gen 1, Gen 2, etc) according to how and where the Analogue to Digital (A/D) conversion occurs and whether the radio is standalone or reliant on an external PC.

A "Gen One" SDR radio is basically a direct conversion device that converts the desired frequency to an audio baseband, indeed the simplest SDR radio is one connected to a sound card on a PC. Most modes can be decoded or encoded by a Gen One SDR, limited only by the hardware/software it is connected to.

The "SoftRock" kits or the commercially available Flex 1500 are typical Gen One radios. The UHF-SDR kit from WB6DHW is a

good start for any VHF operator. There are a number of other Gen One SDR projects have been covered in AR and available on the web.

Unfortunately some of the shortcomings of a Direct Conversion receiver can be inherited by the first generation SDRs. Phase noise and near zero beat artefacts, limited image rejection and strong station break though can be issues. Also sensitivity and dynamic range of the radio is limited by an A/D processing chip essentially designed for another application. Dynamic range (typically 80 dB) is much less than needed in communications. More advanced Gen One radios use additional low noise AGC controlled audio gain stages to get around this.

What is loosely called "Gen Two" is similar to Gen one except uses a higher audio IF frequency (typically 12 – 25 kHz). These radios usually have much better image rejection and don't suffer from phase noise artefacts as much. Some use custom telephony chipsets like the WM8731 that include microphone interfacing as well as some DSP and filtering functions. Whilst some of these chips do have better dynamic range it still remains a limiting factor.

Generation Three is different to earlier generations in as much as the A/D conversion occurs at a much higher, often final, RF frequency. The development of fast FPGAs and ASICs specifically for commercial SDR has enabled a chip to be, in simple terms, plugged into an antenna!

The processing speed of these FPGA/ASIC devices is measured in MFLOPS (Mega Floating Point Operations per Second). Ratings of 200 – 600 MFLOPS are now common enabling devices to operate directly on RF signals up to 100 MHz and beyond. Dynamic ranges also approach that required for communications receivers.

Gen Three is clearly the way to the future of SDR but unfortunately

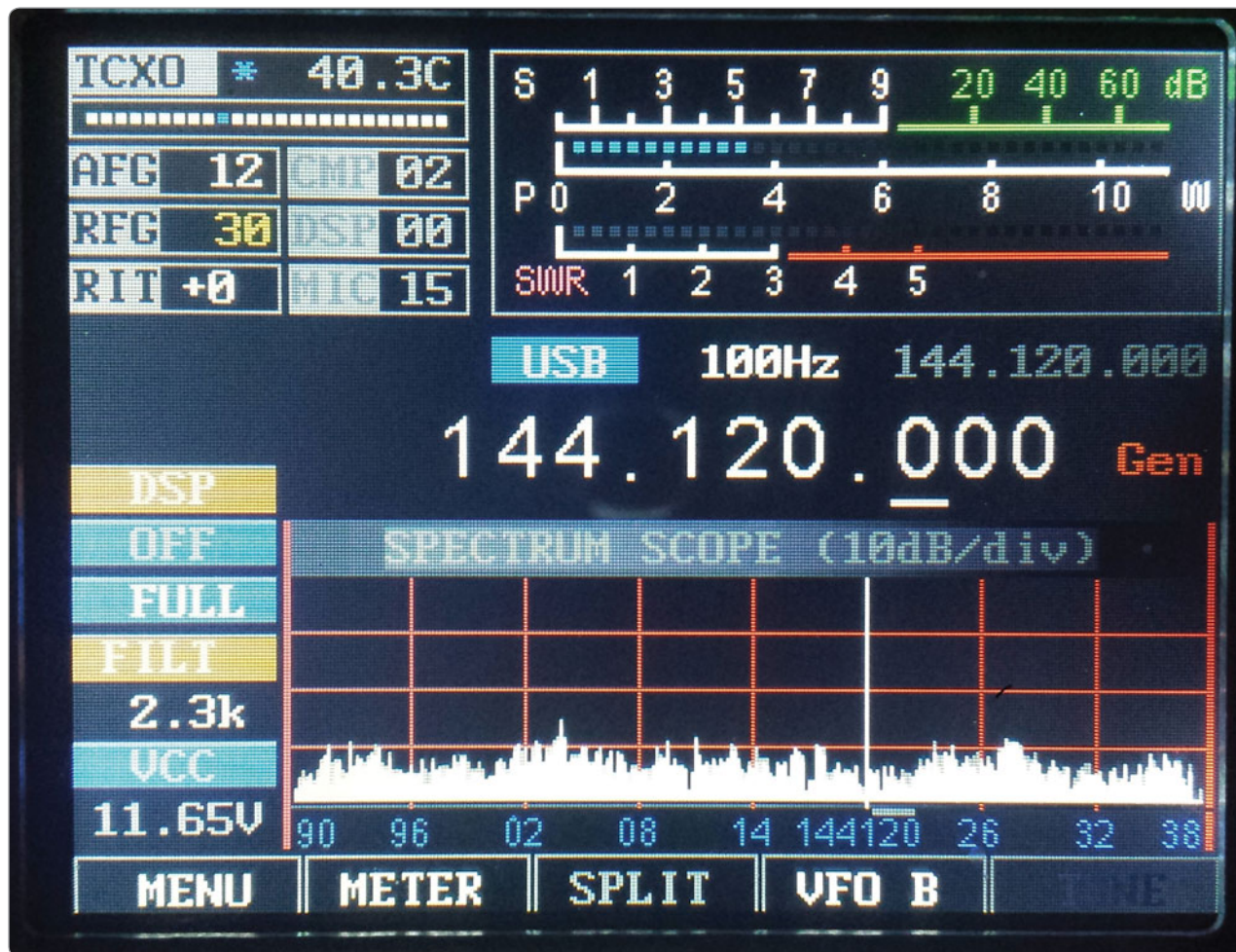


Photo 3: mCHF Controller in operation with UHF-SDR RF board on 144 MHz.

as these devices have yet become a mainstream consumer item the price to implement is still high. Commercially FlexRadio, Apache Labs and Icom have released true examples of “Gen 3” transceivers for HF. For home constructors, the N2ADR HiQSDR project with Quisk software is stable platform. Kits are available from Germany but they will set you back ~\$1000 with our poor Euro conversion rate.

SDR radios can be standalone or PC controlled. PC control enables the direct interfacing with Digital modes through WSJT, MAP65, etc., software. More recently there has been an evolution of standalone controllers based on 32 bit (AIM) processors. The STM32-SDR (VE7PKE & Co), mCHF (MONKA) and Tulip SDR (R6DAN and Co)

controllers are the more well-known. This series will discuss further the use of these digital “back-ends” with SDR radios. A “teaser” photo is included this month of a mCHF controller combined with a UHF-SDR board being used as an IF radio on 10 GHz.

Is there an advantage using SDR over conventional analogue radios? The simple answer is yes! It is partly to do with DSP/ detection techniques and partly to do with minimising the number of stages between the antenna and the “detector” hence reducing noise and distortion effects. Just how much this advantage is to be discussed next month.

## In closing

That’s it for this month. We still don’t have any 50 MHz input but with an Equinox looming we might just get something?? Contributions regarding club projects or proposed activities are always welcome. Just email me at [david@vk5kk.com](mailto:david@vk5kk.com) and I’ll include in the column.

73

David VK5KK

## Meteor Scatter

*Dr Kevin Johnston VK4UH*

In the March column I offered an introductory guide for newcomers to Meteor Scatter (MS).

MS operating is unique in several regards. Multiple stations all operate on the same frequency, at

the same time, while the vagaries of MS propagation opens paths between the various stations with short but geographically separate pings. The pings are sufficiently spread out to allow separation of the various paths and messages being sent out. It is also common practice for a station to have more than one QSO running at the same time with different exchanges being sent to each station. There is also time-pressure to complete QSOs before the activity sessions or the MS propagation runs out. To be able to operate on-top of one another successfully in this way, all stations have to follow a set protocol, like the rules of the road; otherwise the whole deal would dissolve into a radio train wreck.

In the last column I touched on the basics of frequency selection, timing and the exchanges normally sent between stations to complete a valid QSO. Typically, as described last month, each FSK441 (digital) QSO follows the pathway: CQ - 26 - R26 - RRR - 73 - 73 Each station sending the alternate step above (For clarity here the callsigns have been removed).

But at what point is the contact valid and complete? Accepted practice is that the QSO is valid as soon as the RRR report is received. RRR means that there has been an exchange of callsigns and reports in both directions and that all required information is in place. The station sending the RRR of course cannot know when or if the report has been received and would therefore continue to transmit indefinitely. To prevent this "futile" transmission, and release the calling station to move on to another QSO or CQ, then normal practice is to respond to receipt of RRR by sending the 73 report. Sending 73 is not essential however and is purely a courtesy. How would we know when that 73 has been received and where would it stop? There are alternative and potentially more efficient ways of releasing your QSO partner after completion.

The first alternative is for the initial calling station to revert to calling CQ immediately on receipt of RRR report. Providing everyone is following the same "road rules", if you are sending RRR to another station and then you see he reverts to CQ (or he responds to another station) then you can be confident he has copied your RRR and that you are complete and free to move on as well.

The second viable alternative is by an appropriate posting on the VK-Logger. The VK-Logger (1) allows operators to see who else is active, to see and log completed QSOs, to exchange short chat messages between individuals (I-Chat) and finally to allow stations to post an individual activity report at the end of each session which remains as a permanent record of activity. Use of the Logger does not invalidate a QSO provided that no parts of the required reports or exchanges are sent until the QSO is complete. Once RRR is received it is entirely reasonable, and indeed good practice, to post the QSO as complete. The station at the other end, on seeing the posting, can immediately start calling CQ again or call other stations. Clearly this only works if both stations are on the Logger – but you can see that from the screen.

This month I received an email from an experienced MS operator expressing his disappointment and frustration at the operating practices of some other stations. His complaint being that he was frequently left hanging, sending reports that were never going to be answered or worse still, while in mid QSO finding himself being "Dumped off the Dance-Card" before the contact was complete in favour of another callsigns. Further, he complained of then finding his own callsign in the MS reports from other stations as being "heard only".

Clearly not every call can be answered and not every QSO can be completed for a variety of valid reasons. Not all stations

are perfectly matched in terms of power, location or noise level, activity sessions are time limited, MS propagation is an essentially random process and declines as dawn passes and individual operators have other commitments. Sometimes a station gets more calls than he can answer and his "dance-card" gets full. Eventually, at some point, all attempts at completing a QSO have to stop, one way or another. But at what point is it reasonable to terminate a QSO and leave it incomplete. Bearing in mind each attempted QSO represents a commitment in operating time and QSO opportunity, both of which are limited, for both operators. This question, of course, can only be decided by the individuals concerned but it would be preferable to have a consensus of what is reasonable operating practice.

Here are my thoughts which reflect my own practice.

If I respond to a CQ (with a 26 report) and see that CQ continue, or another callsign being called, I assume I have not been seen and therefore I am free to move on to other calls or to CQ myself, at any time, as the QSO has not started.

Once I have seen an RRR report to me I consider the QSO as complete. If my QSO partner is on the Logger I will immediately post the QSO as complete and thank that station for the contact. I consider myself free to resume CQ or to make alternative calls at any time. I believe it is preferable to post on the Logger immediately after RRR and not after 73 to make the entire process more efficient.

If my QSO partner is not on the Logger then I will send 73 for a few cycles, as a courtesy, before reverting to CQ. Even if the 73 is not received, seeing my CQ clearly indicates I have seen the RRR and the QSO was complete.

Once I have started reporting however with either R26 or RRR (depending on who initiated the call) I consider the QSO in-play and



will continue until the QSO is either complete or becomes futile even if other stations are calling me. In my own practice I always announce via the Logger when I am planning to go QRT or QSY so that no stations are left hanging mid QSO. If everyone adopted a similar practice and announced when they intended to stop operating or terminate a QSO then this would limit the frustration and make best use of everyone's opportunity to complete QSOs. You can't invalidate a QSO that cannot be completed.

While discussing the acceptable use of the Logger, here is another point for consideration. It is common for operators, using digital modes including FSK441, to post reception reports or even "cut and paste" text and signal reports received from other stations. Receive-only postings on the Logger or on the I-Chat facility are valid and acceptable practice for the benefit of others. The intention is to let other stations know they are being received and at what signal strength etc. and to alert other stations of their presence on-air. In

general this is acceptable provided that the rule above is not broken i.e. no part of the report sequences are sent which would invalidate the QSO. Some care is required as there is a potential conflict in posting receive-only reports. Consider the following postings to imaginary operator at VK3ABC:

"VK3ABC – copied your FSK441 on 144.230 @ +8 dB" - This is fine.

"VK3ABC – copied my R26 now and responding."

No, this is not OK. The QSO is not complete but VK3ABC could deduce his next report without receiving it on-air. QSO invalidated.

"VK3ABC - copying you and responding appropriately."

Possibly OK. No report is included and so next step cannot be deduced with certainty. Best avoided however to prevent criticism.

".....VK1ABC/R26 VK4XYZ VK3ABC/R26 VK4XYZ..."

Not OK. This cut and paste posting inadvertently invalidates the QSO between the two stations VK1ABC and VK3ABC and VK4XYZ, through

no fault on their parts, by providing the report to VK1ABC without him receiving it on air. This type of posting should not be made until after the QSO is posted as complete.

As many members will be aware, previous editions of *AR* magazine are now available on-line via the WIA website at <http://www.wia.org.au/> using your own login and password. These magazines include earlier Meteor Scatter columns. For newcomers and experienced MS operators there are useful articles to be found including descriptions of new digital modes, Operating during Meteor Showers and suggestions on how best to manage when MS conditions are poor. It is worth looking back now that the on-line facility is available.

The next Meteor Showers to look for include:

Lyrids peaking 22<sup>nd</sup> April 2106 & Eta Aquariids peaking 6<sup>th</sup> May 2016.

(1) VK-Logger: <http://www.vklogger.com/>

Dr Kevin Johnston VK4UH  
Brisbane  
[vk4uh@wia.org.au](mailto:vk4uh@wia.org.au)



## Silent Key Freda Leaver, ex-VK2SU

Freda Leaver became a Silent Key on 11th October 2015, aged 93.

Freda was a WW2 operator, and told me that she was recruited for her radio skills. She never told exactly what her job entailed, but revealed that she worked in Western Australia.

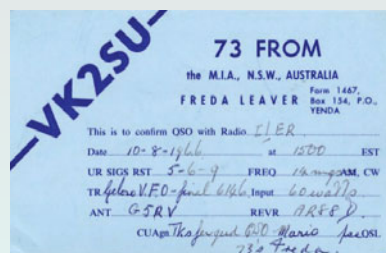
Freda, known as "Miss CW" to the local radio club, operated from the farm she owned with her husband just out of Yenda NSW, and later moved into Yenda.

She spent the last years of her life in an aged care facility in Griffith NSW.

Here is a QSL card from 1966.

73

Liz VK2XSE



Contribute



## Articles and high quality photographs for *Amateur Radio* and *Callbook*.

See <http://www.wia.org.au/members/armag/contributing/>



## VK2news

Tim Mills VK2ZTM

e [vk2ztm@wia.org.au](mailto:vk2ztm@wia.org.au)

Members of ARNSW will soon receive notice of the 2016 AGM to be held on Saturday the 30th April 2016 at the VK2WI Dural site at 63 Quarry Road with a 10 am start.

With daylight saving, or curtain saving time, ending on the first Sunday in April, VK2WI News maintains the same local times on Sunday.

Hornsby & District ARC will be activating VK2IMD on 23 April for the International Marconi Day, an annual event and the only IMD call in VK. The schedule will be given in VK2WI News closer to the event.

Next Month [May] has Foundation courses at both Waverley ARS and ARNSW. The ARNSW Trash & Treasure is on the last Sunday in May.

ARNSW members who received their magnetic calendar late last year might check out the errors that these fantastic computers can introduce. In February it duplicated a group of dates and left the colour off the entries for 1 and 2 May.

The Weekly Solar and Geophysical Report and the ARRL DX News which appears in VK2WI News has been sourced and provided by Patricia

VK2JPA for the past quarter century. In the early days it was also included in the ANARTS RTTY news casts. Patricia has now retired from this task and we must thank her from all those years of the weekly submission. This is a task which we invite others to undertake to help reduce the load on the VK2WI News editor. The DX is down loaded from the ARRL site. The Solar report needs a few minutes to convert and summarize the daily reports into a single weekly report. If interested, email [news@arnsw.org.au](mailto:news@arnsw.org.au) with your offer.

73 – Tim VK2ZTM



The Hornsby & District Club meets twice per month in Mount Colah, from February to November, in both cases at 8:00pm. The Informal mid-monthly meeting on the second Tuesday generally consists of discussion on a wide range of subjects. The monthly meeting on the fourth Tuesday includes a talk, presentation or demonstration on a radio related topic.

Mount Colah Community Centre  
Pierre Close, Mount Colah, NSW, 2079  
*Opposite Mount Colah Railway Station*

### Repeaters

Call	Site	Rpt Tx	User Tx	Split	Modes
VK2RNS	Hornsby	147.250 (91.5)	147.850 (00.0)	+0.600	FM
VK2RHT	Chatswood	438.350 (91.5)	432.950 (91.5)	-5.400	FM+P25

### Hornsby and District Amateur Radio Club, Inc.

Incorporated in NSW: Y0240021

PO Box 362, Hornsby NSW 1630

Web: <http://www.hadarc.org.au>

Email: [secretary@hadarc.org.au](mailto:secretary@hadarc.org.au)

Twitter:  
@VK2MA

## INTERNATIONAL VK2IMD MARCONI DAY

**Saturday 23 April 2016**

EST: 10:00 Sat – 10:00 Sun

CST: 09:30 Sat – 09:30 Sun

WST: 08:00 Sat – 08:00 Sun

HADARC operates VK2IMD each International Marconi Day. It is one of around 60 stations around the world with links to Guglielmo Marconi. VK2IMD celebrates the first direct radio message from Britain to Australia, sent from Caernarfon, NW Wales to Wahroonga, NSW on 22 September, 1918. Marconi Day stations operate on a range of MF & HF Bands.

IMD site: [www.gb4imd.com](http://www.gb4imd.com)

### Participate

**HARGFEST Hills Amateur Radio Group** | 17 April 2016

## Over to you

### AR EDITOR

Hello Peter,

A minor anniversary has just occurred here in VK5.

When the Foundation licence was first introduced, I noted that a lot of these new "F" calls only experienced the FM Mode on 2 metres.

I decided to introduce them to 2 m SSB, having been active on 2 m AM long before FM became popular.

I then started a 2 m SSB Net on a Friday Night at 8:00 Local time. We went up out of the way to 144.150 MHz USB, just far enough away to may be heard by a DX station! With my QTH being Elizabeth some 20 km from Adelaide, I could hear and work most metropolitan 2 m amateurs pointing my beam south.

If you have ever visited Adelaide you will know Adelaide and suburbs is located on the flat plain between the sea, St Vincent Gulf, and the Ranges, the Mt Lofty Ranges. Good for metropolitan 2 m QSOs.

I started the Friday Night 2 m SSB net about 10 years ago. Many Elizabeth Amateur Radio Club (EARC) members joined in. It has been

going well now all this time, helped by the fact that many of the newer all mode multiband transceivers have 2 m SSB installed in them.

The numbers joining the net varies from four to 12 plus, depending on the weather. As you know, some shacks are hot in summer and cold during winter, not air conditioned like mine.

As the Adelaide metro area has increased in size over the years we can have stations 60 km away down south on Fleurieu Peninsula or 60 km north up in the Barossa Valley. Elizabeth my QTH is 20 km north of Adelaide. We even have the occasional station from over on York Peninsula across St Vincent Gulf, we laugh and call it an "Overseas" QSO!

You have to use the RIT on some to make their voices sound correct, especially if you have worked them on FM and know their voices, we try to get them to net on my signal. We have stirred some older amateurs to dig out older transceivers, like FT-290R, IC-202, FT-220 and TS-7000, to name a few.

When we started most "F" calls had vertical

antennas, so we stuck to vertical polarisation. I then suggested participants make or buy 4, 6, 8 or 10 element Yagi and mount it horizontal. Most of us have gone to horizontal. It is a learning experience to the "F" calls to experience cross polarisation QSOs and also signals off the back of their beams.

When I have had to miss out running the net some evenings, others have willingly taken over.

Here is a list of participants; some only come on if they remember the net! Or haven't fallen asleep watching TV!

VK5's AIM\*, NI\*, NE\*, KAF\*, ZW, FD\*, HP\*, VGC, ZT\*, JG\*, DMC, NNT, ZD\*, OQ\*, FDEC\*, ZFO, ZWN, KTT. (\* EARC Member.)

When I visit other amateur radio Clubs, I get comments about the net, some saying they have listened at odd times but cannot join in because of other commitments or that they are on the wrong side of a hill.

I trust Peter you will print this and we may get more on the Friday Night 2 m SSB net.

73 Steve VK5AIM.



## Over to you

### Recruiting new amateurs

Editor AR,

In the January/ February issue, Steve VK4KHQ responded to my letter, but I feel he has missed the point and what's more his attitude is somewhat strange and typifies what's wrong with amateur radio today.

The point I was trying to make is that if amateur radio is to grow in this country we must change the way things are done; Phil Wait and the WIA more or less agreed with the thrust of what I was saying.

Steve says and I quote *"For all others who consider it too hard and want it given to them on a plate, there is Citizens Band (CB) radio"*. So anyone with a learning difficulty or the inability to understand electronics, Steve says they can all go and use CB, which says it all really. When we want, NO NEED, people to join our ranks, we do not need such attitudes. We need to look at what can be done to make it easier for people to join.

Steve talks about not inflicting more work on volunteers with a buy swap and sell. He

may have a point and I would be the first to applaud the work carried out by our hard working volunteers, but again Steve has missed the point. I suggested this as a possible income stream for the WIA and a place where amateurs could sell to other amateurs much like a hamfest without the social side and would have been an internet based system.

Steve on the issue of old fashion states and again I quote *"Try some of the following: contesting, award hunting, SOTA, IOTA, WWCC, CW, RTTY, PSK31, UI-View, MS, AE, EME, and dozens of other modes which you can learn about as you listen. If you don't understand all these abbreviations, you have the choice of LEARNING, or moving to the CB band"*. Well, what can you say to that: the arrogance is breathtaking.

The point I was trying to make was, this is a numbers game, you develop and grow or you cease to exist. We need to grow. If the system

needs to be made easier for this to happen, so be it. I have a Standard licence for which I studied and passed, but if the powers that be decided to give every Foundation holder an upgrade to Advanced tomorrow, it would not bother me as long as they know and understand the regulations, good on them.

Steve, you had to study to get your Novice. Well done but the world keeps evolving, electronics and radio move on. Imagine how our hobby would be if instead of 15,000 amateurs we had 50,000 amateurs, it would be amazing. We would be a force to be heard, there would be all sorts of benefits.

So, Steve, I would suggest to you that you adopt a more realistic attitude to your hobby before it's too late. Welcome people into it; do not suggest they join the CB ranks: that's just silly. Remember that not everyone has the ability, for various reasons, to LEARN and pass exams.

Rob VK3NBC







## VK3news Geelong Amateur Radio Club

Tony Collis VK3JGC



Photo 1: From Left to Right: David VK3QM, Ken VK3AKK, Cal VK3ZPK, Chas VK3PY, Chris VK3ACG, Peter VK3WK, Gerhard VK3HQ, Lou VK3ALB, Lee VK3PK. Additional GARC participants, not pictured, were Charlie VK3NX, Matt VK3PP and Bert VK3TU.

### The GARC hosting of the 3.4 GHz Field Day

This event all started in March 2015 with a fortuitous meeting between Geoff VK3ZNA, Lou VK3ALB and David VK3QM that then turned into a GARC project spanning almost 12 months; resulting in a resurgence of experimentation in the 3.4 GHz band.

As a direct result of the investigations carried out by David, the GARC produced conversion instructions to enable surplus **3.5 GHz Transcriber Panels** to be converted into quite capable 3.4 GHz transverters.

This project enabled many amateurs on a budget to get into microwave activity without breaking

the bank. Comments on VKLogger throughout the year showed that amateurs in a number of states were building and experimenting with these panels. Ideas for filtering and hints for modifications were posted as well as details around the code for the ATMEGA8 that runs these panels.

In December 2015 the GARC announced their intention to host a 3.4 GHz QSO activity on the morning of 21 February 2016 specifically to encourage activity on the microwave bands and also to give those avid panel owners a chance to get on the air and make a little noise.

The premise was simple, for a two hour period the club would

field a number of 3.4 GHz capable stations on hilltops and high spots around the Geelong area and invite all those with 3.4 GHz equipment to join them. A period of two hours was chosen to minimise disruption to family activities and maximize the chances of making a contact.

We could not have imagined at the time that a plan for such a simple activity could have turned into the big event that it did. The big day finally arrived and as is often the case in Geelong the weather was perfect for such an event. Clear skies, little wind and forecast of 28 degrees - what more could we ask for.

The contest radar page ([www.contestradar.com](http://www.contestradar.com)) showed eight



GARC members scattered around Geelong and a handful of stations to the east of Melbourne. What wasn't shown were a number of stations in the Ballarat area as well as some on Mt Dandenong and even more stations in Gippsland.

GARC member Matt VK3PP positioned himself on Mt Leura in Camperdown making him our most westerly target and most eagerly sought.

The GARC Geelong repeater VK3RGL 2 m was used for liaison and those in the area that were listening said that they had never heard the repeater that busy. Reports from those listening on 3.4 GHz said that it was like a DX contest on 20 m with stations all over calling and in QSO with others. It was particularly pleasing to hear people stopping for a chat instead of racing off to exchange reports with other operators.

Distances covered depended on terrain and station setup. There were a number of large stations boasting 600 mm or greater dishes and TX power ranging to 30 W. The panels were limited to 1 W TX power.

In VK3, contacts ranging to 300 km for larger stations, almost

200 km for panel to large station contacts and distances greater than 100 km for panel to panel contacts were reported.

Reports from VK2, VK5 and ZL showed that they all had a great time and from logs gathered and comments on VKLogger and



Photo 3: (four photos) Shows the set up at VK3ALB, VK3ACG, VK3PY and VK3HQ / VK3PK.

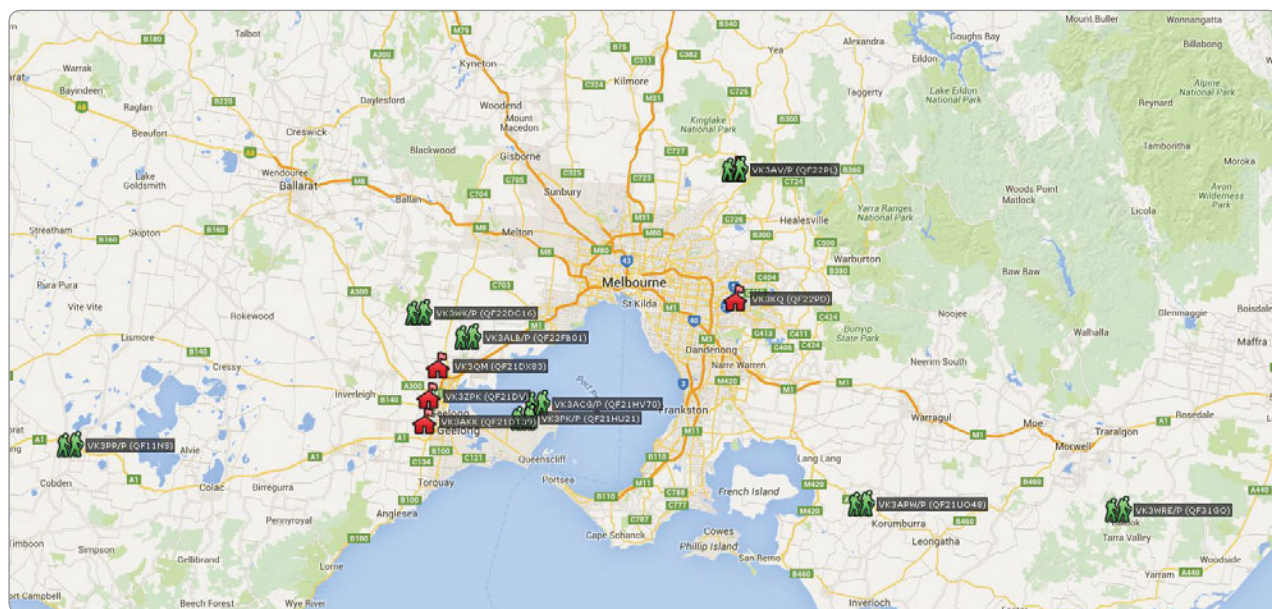


Photo 2: Google Map showing 3.4 GHz covering on the GARC Hosted Field Day.

various blogs we determined that there were 9 VK2s, 27 VK3s, 6 VK5s as well as 4 ZLs all on the one band at the same time – surely some kind of microwave activity record!

All too quickly our two hours of radio activity were up but that was certainly not the end of the day for the GARC. After the event 26 club members and partners gathered

at a picnic ground in the You Yangs Regional Park for a relaxing BBQ. As well as lunch we also participated in a number of activities including, a scavenger hunt, boomerang throwing, giant quoits, geocaching, fishing for magnetic fish, and a rig chucking contest which for some reason the girls took to with particular enthusiasm.

It was a truly fantastic day on the air for amateur radio. Of course a day like this is nothing without participants and the club would like to thank all of those both in VK and ZL that took part in and event for no other reason than it was fun. Well done everyone.

(This report provided by the GARC President Lou VK3ALB).



## REFLECTIONS follow

Members reflections on the GARC sponsored 3.4 GHz Field Day on 21st February 2016	
Chas VK3PY	My first contact was with Rod VK3BQJ in Bairnsdale .Other notable contacts were VK3WRE on Mt. Tassie in Gippsland, VK3APW near Korumburra and VK3PP on Mt. Leura. In all, I made 22 contacts into six grids. A nice way to start the day and a nice morning's work on 3.4 GHz.
Ken VK3AKK	I had 17 contacts, 8 were club members, plus 4 from Gippsland, 2 from Ballarat and 3 from Melbourne. A good day and worth the effort.
Lee VK3PK	9 stations worked and 3 Grid squares worked. Best contact VK3KG 87 km. Really enjoyable activity. Success determined by location, location, location especially NO near end obstructions.
Gerhard VK3HQ	9 stations worked and 3 Grid squares worked. Best contact VK3KG 87 km. Quite an eye opener on the effect of terrain. Interesting to note some big reflections from unexpected directions.
Matt VK3PP	What a great day! I had 5 completed QSOs and a couple of non-completed ones. Most noteworthy was VK3WK and VK3KG with S8 signals and Rob VK3MQ: we both could hear each other's beepers and he could hear me!
Cal VK3ZPK	Worked 10 call signs, 8 stations; heard many more but because of my easterly looking aspect unless the signal was big I couldn't work it. Some Stations to the west of me were heard but not worked.
Lou VK3ALB	Amazing, 21 contacts in two hours on a single microwave band. There was a real sense of fun and camaraderie and everyone played nice on a very crowded band. Certainly worth the climb up Flinders Peak.
Charlie VK3NX	I managed to work: 9 stations before I had to cease operations. All signals were surprisingly strong. More importantly, it was a lot of fun and great to see the "panels" being utilised..... All we need now is another activity day
Bert VK3TU	My antenna direction more or less favoured VK3WRE & VK3ZYC so they got the first reply. Lee VK3PK & VK3HQ were next followed by VK3ACG, Chas VK3PY, Dave VK3QM; after, Cal VK3ZPK. I also heard from VK3s KQ, AXH, APW, AV, There's one thing for certain though, that if a single band can generate this much activity on what used to be considered an almost "orphan" band, it can only be a good thing.
Chris VK3ACG	I worked 16 stations and from my location the amount of stations I could hear at once really did make it like working on HF. It was definitely one of my biggest highlights in amateur radio so far and a day I will remember for a long time to come.
Peter VK3WK	I made a total of 14 contacts in the two hours. Best DX was Matt VK3PP and Peter VK3APW. If we hold another one, I'm sure people will think about optimising their location in relation to other stations and their radio horizon now they have a feel for what's possible. The length and start time were good and allowed people to utilise the afternoon for other activities.
David VK3QM	I made 18 contacts to 17 people, I was glad to work VK3PP, although I had to resort to the 60 cm dish for this. I worked Ralph VK3WRE on the panel, a distance of 198 km. Activity was considerable and it was fantastic to see the amount of enthusiasm generated on the day. Well done to all involved and to the GARC for both the event and barbeque afterwards.

## Silent Key **Noel Walker VK2ZNS**

Noel Walker VK2ZNS passed away at the Karingal Gardens Nursing Home Taree during the early hours of Thursday morning February 4. He had been doing it tough during the previous five or six weeks, but is now free of those problems.

Noel had been a licensed amateur for approximately 55 years. He was the only life member of Taree and District Amateur Radio Club and was also a life member of the Blue Mountains Amateur Radio Club.

Noel, you served the amateur community well!

Ross Barlin VK2DVZ  
President and Publicity Officer  
Taree and District Amateur Radio Club





# VK3news Melbourne Electronic Radio Club (MERC)

Terry Cox VK3TEZ



Photo 1: Trading in the 'Masonic Centre' was lively.



Photo 2: The crowd around the BBQ, which gave an excellent breakfast and lunch.

## Melbourne Electronic Radio Club Hamfest

The Melbourne Electronic Radio Club (MERC) held a Hamfest in Werribee in February 2016. The Hamfest was the first for MERC and was the first for the western suburbs of Melbourne. Club member Andy (VK3VKT) set up a great venue with the hall fully booked by traders. Over 200 Amateurs and friends enjoyed the club venue at the old Werribee Shire offices (circa 1868) which later became the Masonic Centre.

Breakfast and lunch was available at a BBQ next to the entrance, with parking on site. Many people from the west of Melbourne and further afield attended with one happy camper resting in the large park across the road alongside the Werribee River.

Thanks to the people that helped make the day a success and we look forward to this becoming a regular event.

Terry VK3TEZ.



## Silent Key Waldis Jirgens VK1WJ

The VK1 region and Canberra Region Amateur Radio Club has lost a long time stalwart of amateur radio. It is with sadness that we advise of the passing of Waldis Jirgens VK1WJ on 10 September 2015 after severe illness.

Waldis was born in Riga, Latvia in 1940. However, as a young boy along with his family they fled the advancing Russians in 1944; first by ship to Danzig then by train to a camp near Stuttgart.

In the late 1950s as a university student (studying for a Master's degree in mathematics), he sat for his first amateur radio licence and was issued with the callsign DJ0DQ, a call issued to displaced persons following WW2.

He was later issued the call DK3SA after becoming a German citizen.

In 1980, Waldis and family migrated to Australia.

As VK2DXV, Waldis joined the Central Coast Amateur Radio Club, having to sit his amateur licence exams again to gain an Australian licence, there being no reciprocal agreements with Germany.

Around 1983 Waldis was on the move to the Blue Mountains area and joined the Blue Mountains Amateur Radio Club. 1997 found Waldis on the move to Canberra with a new call: VK1WJ.

During his time in the Sydney area, he was employed by the Fairfax Group/Channel 7 as the Technical Services Manager IT Services.

On his arrival in Canberra, he first joined the VK1 Division of the WIA which then became the Canberra Region Amateur Radio Club. He became the Outwards QSL manager for both the VK1 Division and CRARC, which was a position he held until his passing.

Waldis was always willing to help newcomers to the hobby and his fellow amateurs with advice on Morse code, digital modes, satellites, contesting, home brewing (not alcohol!) and of course computers. As a result of his contesting and amateur activities he had on display in his shack many award certificates as testament to his efforts.

To his wife Sigrid and children Tatjana, Boris, Christoff, and his grandchildren, we offer our sincere condolences.

He will be missed by the many friends he made through amateur radio.

Amanda Hawes VK1WX  
President, Canberra Region Amateur Radio Club



# Silent Key

Gordon A Dowse VK2AGE

Gordon's interest in wireless in his early years was fuelled by a neighbour who supplied Gordon with a copy of Popular Mechanics and then, in his mid-teenage years, Radio – Television and Hobbies.

At about age 17, Gordon installed a 32 volt lighting plant into his father's dairy with extra cabling into his parent's house and to his mother's delight, we suspect, she no longer had to light the kerosene lamp to see what they were eating. Gordon was often called upon by the neighbouring families to fix or install just about everything electrical and mechanical from A to Z.

Gordon's first official job was as a maintenance electrician with the local sand mining crew at Boulders Beach between Ballina and Lennox Head. After this he moved to Ballina to work for Charlie Bewers repairing radios and later televisions.

In 1952 he sat for and passed his AOCF, which opened up a whole new world of communications and experimenting. In 1963 he was approached by 2LM, the local AM radio station, to work under Hec Green the lead technician. His talents then led him into television when he became part of the team that put together NRTV at their studios in Goonellabah and then the transmitters on Mount Nardi.

In 1959 he attended a gathering of local amateur operators at the surf sheds in Brunswick Heads which quickly became a meeting about forming a club of some type. So, as history has it, Gordon became the President of the first local amateur radio club in the Northern Rivers, which eventually became known as Summerland Amateur Radio Club. The Club proudly continues today due to his and many other amateur operators' forward thinking and promotion of the hobby.

Gordon had attended the Marconi School of Wireless and a multitude of courses that improved his working knowledge of the ever changing face of wireless communications.

1969 saw the first local Civil Defence exercise held in Ballina NSW that put the local group up against the might of the



*Gordon Dowse VK2AGE at stage one of many advances to his ever growing radio communication equipment, this allowed him to run a radio mailbox systems on HF, VHF & UHF 24 hours a day, 7 days a week for 24 years, fully automated.*

army and navy. As legend has it, our local group had achieved their goal of crossing the canal into Ballina and had setup HF comms, contacted Sydney HQ whilst the other lot were still working out who should go across the canal first.

Mid to late 1969, one of his colleagues dropped his name to a representative of AWA and this led to an interview which landed him in the deep space industry, so in late 1970 the family moved to the township of Woomera in South Australia. This was real big boy's toys. Here there were endless opportunities to gain experience and continue expanding his knowledge base, with the latest radio gear to experiment with and that was what they did, tracking countless number of space craft both manned and unmanned.

Woomera was an amazing town, unlike anything you have ever experienced. I remember the Commonwealth Police used to stop the bus coming in from DSS-41 or Narunga randomly just to hear the occupants start singing some tune about police brutality. They all got off the bus, lined up down the side whilst the officer walked up and back down the line and then they all got back on just to travel 100 metres to the bus stop.

Gordon excelled in the field of RF engineering and digital communications here and when Island Lagoon DSS-41 was shut down in late 1972, he took up a position at Tidbinbilla DSS-42 just outside Canberra and the family spent its

first winter there in 1973. In 1975 Gordon decided it was time for new surroundings, so he handed in his notice and the family moved back to the Northern Rivers where he set up home in Goonellabah.

Gordon was a part of many firsts for the Northern Rivers region; he fitted the first two way radio and base station to the only taxi company in Ballina, the first HF radio gear to a local trawler, the first commercial television transmitters on Mount Nardi and the first local community FM radio station outside metropolitan areas.

One of the first projects when moving to Goonellabah was to build a colour television from scratch; the picture tube was purchased from Philips and the rest was manufactured and assembled by hand. In late 1977, the TV breathed life and did so for many years, but his passion was amateur radio. "A realm with limitless boundaries for all types of communications" is how he would describe it.

Gordon had obtained his full call back in 1952 and now he had the time and space to set it all up. The shack quickly took shape with just about everything being homebrewed, designed and built by Gordon until finally in mid-1979 he had automated everything and created the first amateur radio mailbox in the southern hemisphere. These systems allowed amateur radio operators from all over the world to send and retrieve messages 24 hours a day 7 days a week from base to mobile and maritime stations. This service run basically fully automated for 24 years with the odd upgrade of equipment or software. If you search the overseas university websites you would find many papers written about these systems and their ability to produce the most stable of signal sources.

Quiet natured with a good sense of humour Gordon was a gentle caring person that facilitated his families learning as they grew. He expected nothing from anyone but provided for all who came and went throughout his life. He will be remembered by all as one of life's greatest gentlemen.

Ross Dowse VK2ARD



Participate

AM and CW on ANZAC Day Tableland Radio Group | 25 April 2016



## VK6news

Keith Bainbridge  
e [vk6rk@wia.org.au](mailto:vk6rk@wia.org.au)

Welcome to another month of VK6 Notes. A bit quieter this month I'm afraid, but the next edition should contain some interesting reports including the inaugural Peel Hamfest and JMFD. We will start off this month with the news from the **Hills ARG**.

### Hills ARG

Hello from HARG, the Hills Amateur Radio Group.

All readers are invited to enjoy HARGfest, our annual amateur radio buy and sell day to be held on Sunday 17 April. That's only two weeks away. The venue will be the same excellent hall as last year – The Lesmurdie Hall at 96

Gladys Road Lesmurdie. Just think of it! Thirty tables stacked with hundreds of interesting devices and useful parts and information. Entry for sellers is at 9.00 am and for buyers at 10.00 am. Food and drink available all day are including our popular HARGburgers. The raffle of a number of attractive pieces of amateur radio equipment and tools will be held at 1.00 pm and doors close at 2.00 pm. Entry fee is the usual \$5 for every person attending, both buyers and sellers. Tables are free but if you have something to sell please book your table early as last year they booked up really quickly.

Bookings to [secretary@harg.org.au](mailto:secretary@harg.org.au)

Looking forward to seeing you all there. A great opportunity to catch up with friends and have a good chat in comfortable surroundings!

The club is again participating (or by the time you read this will have participated) in the John Moyle Field Day. A group of members recently scoped out the site we will be operating from with an overnight camping trip. All went well with a wire antenna strung up in the trees. Several different earthing improvement solutions were tested and all had a good time. Ray VK6ZRW will be keeping a closer eye on his car keys next time. After his camper trailer was



## AMSAT-VK

AMSAT Co-ordinator  
Paul Paradigm VK2TXT  
email: [coordinator@amsat-vk.org](mailto:coordinator@amsat-vk.org)

Group Moderator  
Judy Williams VK2TJU  
email: [secretary@amsat-vk.org](mailto:secretary@amsat-vk.org)

Website:  
[www.amsat-vk.org](http://www.amsat-vk.org)

Group site:  
[group.amsat-vk.org](http://group.amsat-vk.org)

### About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial amateur radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft. AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

### AMSAT-VK monthly net

#### Australian National Satellite net

The net takes place on the 2nd Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. Check-in starts 10 minutes prior to the start time. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

#### In New South Wales

VK2RBM Blue Mountains repeater on 147.050 MHz

#### In Queensland

VK4RIL Laidley repeater on 147.700 MHz  
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

#### In South Australia

VK5TRM, Loxton on 147.175 MHz  
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278,  
EchoLink node 399996

#### In Tasmania

VK7RTV Gawler 6 metre repeater 53.775 MHz IRLP node 6124  
VK7RTV Gawler 2 metre repeater 146.775 MHz IRLP node 6616

#### In the Northern Territory

VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT or VK3JED conferences. Past experience has shown that the VK3JED server offers clearer audio. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

### Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. Currently only SO-50 is available.

Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.



fully packed and hooked up to the car, and only milliseconds after his number 1 harmonic was heard to say, 'That went really well Dad. We must be getting good at this', Ray reached into his pocket to find the car keys were missing. After pulling everything back out of the trailer, setting up the tent in case they were inside and checking the car, a panicked look was appearing on Ray's face.

Alan VK6PWD always having a home brew gadget at hand, started dragging a magnet through the leaves on the ground. No luck there. Another look at the contents of the car and the panic ended. There they were, right where he left them, in the laptop bag. 'Isn't old age wonderful' the harmonic commented.

HARG Meetings are held twice a month at the club rooms at the Paxhill Guide Hall near the corner of Brady and Sanderson Roads in Lesmurdie. The Social and Practical meeting is held on the second Saturday of the month and the General Meeting, often with a technical talk, on the last Saturday of the month. Doors open at 1.00 pm for a barbecue lunch and the meeting starts at 2.00 pm. Everyone is welcome. More information is available at [www.harg.org.au](http://www.harg.org.au)

The HARG website has recently been revamped by Richard VK6BMW so please have a look. Cheers from Bill VK6WJ Publicity Manager for HARG. Thanks Bill (and Ray VK6ZRW).

Several groups will have been out and about in the John Moyle this year and I look forward to reports for the May edition of VK6 Notes.

## Bunbury Radio Club

Now it's time for the SouthWest and our regular contribution from Norm VK6GOM and the **Bunbury Radio Club**.

Neil VK6FNKS has stood down as vice president for personal reasons. Neil has been a stalwart of the club being the driving force behind many projects and



Photo 1: Some keys from the NCRG Key Collection.

activities. He is to be thanked for his endeavours over many years. Brian VK6TGQ was elected to replace Neil as Vice President.

On 6 February, we conducted a number of assessments and licence upgrades. Of these five passed the Foundation and one passed the Standard examination. Since we started conducting assessments about 18 months ago, we have performed the following:

- 23 Foundation licence assessments
- 10 upgrades to Standard licence assessments, and
- 3 upgrades to Advanced licence assessments.

Overall we have conducted a total of 68 individual assessments, indicating that amateur radio is still attracting newcomers.

Johnathan VK6JON, Alek VK6AP and Dicko VK6VRO are all planning to operate in the John Moyle contest.

At a meeting in 2015, the Club decided to investigate putting

an AllStarLink on the VK6RBY 2 m repeater. AllStarLink is an internet based repeater linking system something like EchoLink and IRLP. Once the link is active, it will be possible to link the repeater to others. A primary motivation for the project is that the Southern Electronics Group (repeaters at Albany, Mt Barker, and Katanning) are using this system to link all their repeaters together, and asked us if we want to get involved.

Once installed the link can be

operated by local users - i.e. we can disconnect links, add them, and so on by using DTMF commands and we hope to complete this project in 2016.

A radio located at our clubhouse will provide the RF link to the repeater at the Harvey site. This radio is connected through an interface (called a URI) to a single board computer (a BeagleBone Black - sort of a Raspberry Pi on steroids). This computer is running the AllStarLink software under Linux and is linked to the internet by Dicko's ADSL.

Ian VK6MIB has undertaken the lead on this project and he reports that the URI has been purchased (the guts of this is a USB sound card interface, but it has extra pins for the PTT and squelch opening detection), and the BeagleBone. The software on the BeagleBone has been installed and partly configured and the registration process AllStarLink organisation has commenced.

Ian has experimented with a

couple of Tait T2020s, one has the accessory port on the back which is nice for picking up the COS without having to solder on to a SMD pin. However, these are both narrow band (12.5 kHz channel spacing, 2.5/5 kHz deviation) and there are some issues with that bandwidth that need resolving.

The Bunbury Radio Club's "Christmas" party for members and prospective members and spouses is now planned for 12 March, to be held at 21 Halsy Street, Bunbury commencing at 1500. For details contact Dicko VK6VRO. This get together will replace the regular monthly meeting.

Anyone interested in sitting for Foundation or other licence upgrades should contact Norman VK6GOM on 0438 878 582.

The next monthly meeting of the Bunbury Radio Club will be held on Saturday, February 13 from 2:00 pm. at Manjimup SES HQ. Locations for future meetings are:

- March – Bunbury
- April – Bunbury
- May – Harvey
- June – Bunbury

Any South West based amateur (or anyone interested in radio or electronics) is more than welcome to join and participate in our activities. Because so many of our members come from near and far we are evolving into a semi "virtual" club. Consequently, regular attendance at meetings is not a requisite for membership. The annual fee is only \$25.00. Those wishing to join can contact the Club via our Secretary, Nick Evans on 0429 201 343, or [vk6brc@wia.org.au](mailto:vk6brc@wia.org.au)

Thanks Norm, the South West is humming these days!

## NCRG

I had some emails from Bob Crowe VK6CG who has made some really interesting Morse keys over the years. As Curator of the NCRG Key Collection (originally the collection of Dave Couch VK6WT), I have more than a passing interest in keys and



Photo 1: Some keys built by Bob VK6CG.

was intrigued to see some of Bob's designs. He sent some pics which I had hoped to reproduce here but the image sizes were too small. I've requested bigger pics from Bob for next month's Notes. Watch this space, you will be impressed :)

On the subject of the Morse Key Collection, I have been busy cleaning up some more for display, mainly Bugs this time, and they are now in the cabinets at the club. If you would like to see them, or even donate a key or two yourself, please come to the NCRG any Sunday morning and we will be happy to show you the collection, and a few other CW related items on display.

Activity at the clubhouse has been mainly repairing damage done by the lightning strike, a much improved, monitored security system and preparing for John Moyle Field Day.

JMFD was a major activity on the clubs calendar in the 80s and 90s but general participation around the Perth metro area declined to the point where there was no-one to contact if you travelled the then 50 km distance away from Perth to set up your station. We moved to

the following weekend and switched contests : (Now we are back in it this year and there is a genuine enthusiasm to take part, or even try to win it :)

A report will follow next month. Unfortunately, I will be in Busselton with five UK visitors over that weekend so will miss out this year.

Members, led by Larry VK6NOL, are working on their Mag Loop projects with considerable efforts, capacitors are being designed and machined from brass sheet, varying lengths of LDF 750 are being chopped up and prepared and designs are changing on an almost daily basis. I'm waiting till all is sorted before constructing mine :)

First results are really impressive and these Mag Loops could be a useful solution to problems of Towers and awkward neighbours.

Thanks again to all our contributors and I look forward to receiving a much bigger selection of reports next month, please?

73 de Keith VK6RK.



# Silent Key

Claude William (Bill) Brooke VK2ZCW

Bill Brooke VK2ZCW passed away in hospital in Port Macquarie on the 17th of December 2015, aged 82 years, after a long illness.

Bill was born in New Zealand, on 23 February 1933. Despite his given names being Claude William, he was always known as Bill to avoid confusion with his father, Claude. Bill was the eldest of five children.

Bill had an isolated childhood on Waiheke Island in Auckland Harbour. He had to leave home to attend High School in Auckland where he learned to play the trumpet. This started his lifelong love of music.

Bill enlisted in the New Zealand Navy in 1951 and served in Korea and Malaysia. During his Navy service, Bill came to Australia for training and met Ailsa who he married in Perth on 8 January 1955. They celebrated their 60th Wedding Anniversary in 2015. Bill was often away at sea until he secured a land based posting to the Naval Communication Station at Waiouru in New Zealand.

Bill left the Navy in 1960 and the family moved to Australia where Bill worked



at Space Tracking Stations at Carnarvon in Western Australia, Toowoomba in Queensland and then at Canberra. In 1990 Bill took a posting to Hong Kong for two years. With the handover of Hong Kong to China, this Tracking Station moved to Geraldton in Western Australia and Bill moved with it.

Bill retired in 2001 and he and Ailsa moved to Port Macquarie on the North Coast of NSW.

In retirement Bill was an active member of the Oxley Region Amateur Radio Club. He

could always be relied on to enthusiastically participate in club working bees and always made valuable contributions to club projects.

Bill was a volunteer with Port Macquarie SES until recently. He was an active member of Probus where he and Ailsa had a wide circle of friends. He had an excellent singing voice and both Bill and Ailsa were very popular entertainers at local retirement homes. His last outstanding performance as an RSL member was when he sang the New Zealand National Anthem at the 2015 ANZAC Service on the Port Macquarie Town Green.

The amateur radio fraternity extends its deepest sympathy to Bill's wife Ailsa, and to their children, Fiona and Robert, and their families.

Vale: Claude William (Bill) Brooke VK2ZCW

*Submitted by Henry Lundell, VK2ZHE on behalf of the Oxley Region Amateur Radio Club Inc.*



## GippsTech 2016

Those wishing to present at this year's conference should contact the Chair as soon as possible:

**[vk3pf@wia.org.au](mailto:vk3pf@wia.org.au)**

Peter VK3PF

Conference Chair

**The annual GippsTech conference is coming. GippsTech has a reputation as a premier amateur radio technical conference. It focusses primarily on techniques applicable in the VHF, UHF and microwave bands, especially for weak-signal contacts.**

**GippsTech 2016** will be happening on the weekend of the 9th and 10th of July, at Federation University Australia Gippsland Campus in Churchill, Victoria, about 170 km east of Melbourne.

### Call for papers

Anyone wishing to share information with others is invited to submit a title and brief summary of your planned presentation to the Conference Chair Peter VK3PF as soon as possible. Please be sure to indicate your expected length of presentation: it could be a short 10 minute item through to a detailed presentation of up to an hour.

We look forward to seeing you at GippsTech in early July.

Further details will be available from the Eastern Zone Amateur Radio Club website: <http://www.vk3bez.org/>



# Improved Battery - William Bleeck History

## Part Two: Experimenting

Don Marshall VK4AMA

Part 1 (AR March 2016) outlined how my grandfather, William Alexander Felix Bleeck, was a keen experimenter with primary batteries and wireless apparatus in Victoria and Queensland pre-World War I.

World War I broke out in 1914 with Australia offering to play its part in the defence of the British Empire by sending troops overseas. By early 1915, the Bleeck family was living in Adelaide Street, Malvern. Will was foreman for a nine-month switchboard contract at the Melbourne Central Telephone Exchange.

It must have come as a great surprise to the Bleecks, and an embarrassment to government authorities then, when Victoria district military authorities acting under the *War Precautions Act 1914* had their home "raided" on 26 February while Will was at work.

Many newspapers across an anti-German, pre-Gallipoli Australia reported that radio-telegraphic instruments had been seized there.

According to the Melbourne newspaper *The Argus* of 3 March, the raid followed private reports to intelligence staff. A "wireless plant" comprising of a receiver (double tuning coil for adjustment to various wave lengths, a detector, a variable condenser and a headset wireless telegraphic receiver) had been discovered.

*"These constitute a complete receiving set and could be erected to receive wireless messages within a few minutes. No wireless mast or external apparatus would be necessary for the effective operation of the instrument. A strained wire, as fine as a fiddle-string, inside the room used for operating the plant would be the only medium necessary if an aerial and earth*

*connections were attached."*

The report claimed that the owner, Mr Bleeck, previously lived at 258 Brunswick Road, Brunswick, where, it was stated officially, he owned and operated an unlicensed wireless station.

He was of German parentage, born in London, but had resided in Australia since he was 12 months old.

*"About three years ago, Bleeck who is an expert electrician, paid a visit to Germany. The object being to take letters of patent for an electric battery."*

*"The wireless apparatus seized required only a dry battery to convert it into a transmitting instrument. Included in the apparatus discovered in the room used as a laboratory were a number of other instruments including several telephone receivers and switches."*

*The Argus* continued: "The Postmaster-General is authorised to act in such a case by regulations under the *War Precautions Act*. Section 4, sub-section 11, paragraph 12 stated: No person shall without lawful authority injury or tamper or interfere with any wire or other apparatus for transmitting telegraphic or telephonic messages or any apparatus or contrivance intended for or capable of being used for a signalling apparatus, either visual or otherwise, or prevent or damage or in any manner interfere with the sending, conveyance or delivery of any communication by means of telegraph, telephone or otherwise, or be in possession of any apparatus capable of being used for tapping messages by wireless telegraphy or otherwise."

*"Upon the outbreak of war due*

### WIRELESS APPARATUS.

#### SEIZED AT MALVERN.

#### A MILITARY RAID.

Important information which came into the possession of the Victoria district military authorities a few days ago has led to the seizure, at the residence of William Alex. Bleeck, of Adelaide street, Malvern, of a complete set of radio-telegraphic apparatus.

Photo 1: *The Argus*, Melbourne, 3 March 1915.

notice was given by the military authorities to all owners of wireless instruments to notify the authorities of their existence, and the penalty provided for in the regulations for non-compliance with this order is six months' imprisonment, or a fine not exceeding £100."

William must have been very angry. He called his solicitors about factual errors and possibly libellous or defamatory matter. On 5 March, *The Argus* published an edited letter from the solicitors headed *The Malvern Case. An Explanation* addressing many of the claims published and inputted based on information apparently provided by Government officials.

The letter stated there had been no raid, nothing to discover, no complete receiving set or an aerial and earth. "Expert" Mr Bleeck was powerless to convert the apparatus into a transmitting set using a dry battery.

Although Mr Bleeck's parents were German, he knew of no relative living in Germany nor had he visited any person in Germany (in 1909), seeking only to have his battery discovery recognised by a German patent.



Photo 2: Mr Bleek about 1915.

Mr Bleek had discovered what he considered to be the weak spot in Marconi's invention for wireless telegraphy. At no time since he owned apparatus had he sent a message of any kind. Oaths of

secrecy required him to report any messages received accidentally to authorities.

The "unlicensed wireless station" was his experimental apparatus with an aerial. It was doubtful whether

a well-known electrician for so long associated with the telephone and telegraph departments experimenting in such a manner in such circumstances and with such an apparatus required to be licensed in times of peace.

The letter stated that not since the outbreak of the war had Mr Bleek received any personal notice from any department but, gathering from the newspapers it was the wish of the Government that such an apparatus should be dismantled, he immediately dismantled his aerial and put it into the box where the officials who called saw it there unused and untouched since the war began.

Mr Bleek had severed his connection with the Commonwealth and was following the occupation of an electrician specialising in the installation of private telephone systems. This explained the presence of the whole of the apparatus and instruments in his possession.

*"We see in the manner in which this matter has been handled a grave injustice to an innocent man who habits, interests, prejudices and sentiments are and have been as thoroughly British and loyal as the wildest scaremonger amongst us."*

Many newspapers obviously fearing possible legal action published similar edited versions of the letter.

Many newspapers across Australia reported that Will appeared in the Malvern Police Court on 29 March 1915 charged with having in his possession an apparatus capable of tapping wireless messages.

A radio-telegraph department officer gave evidence that he had found a tuning inductance, a "sliding" condenser, a 1500 ohm telephone receiver, and an adjustable detector plant. It was well constructed and complete except for a crystal about the size of a pea. Its range would be 50 miles in the daytime and 500 miles

at night. It could have been used for tapping wireless messages and the defendant had no authority to use it.

Cross examined, he said a clothes line could have met the purpose of an aerial if sufficiently long. As it stood, the apparatus could not receive messages. It was not a transmitting instrument. It had been used as a receiver but he could not say when. The defendant had no authority to use the apparatus.

In his defence, Will said he had been born in London but in Australia for 39 years. He had no association with Germany. He felt the insinuation about disloyalty very strongly. He had been experimenting for years and the department head knew what he had been doing.

The instrument produced was of no use to him after the aerial had been taken down for it was too crude to receive messages without the aerial. The apparatus had not been used since the war broke out.

He was not aware that it was necessary to be licensed when only a student. The instrument produced was crude from a scientist's point

#### POSSESSION OF WIRELESS

**ELECTRICIAN EXPLAINS**  
Charged under the War Prosecutions Act at the Malvern Police Court on March 29 with having had a wireless telegraphic apparatus in his possession without authority, William Andrew Bleeck, Adelaide street, was fined £1, with £2/3/ costs.

A. F. Newman, of the G.P.O., said that it was a complete receiving instrument, with the exception of a crystal. Its range would be about 50 miles in the daytime and 500 miles at night. It was capable of being used for tapping wireless messages.

Bleeck said that he was an electrician, and had been employed by the Postal Department for 15 years in several of the States. He had been using the instrument for experimental purposes at Brunswick, but when war was declared he dismantled the aerial mast, took down the wires, and destroyed the mast. He put the instrument into a box. He subsequently removed to Malvern, and the instrument remained in the box till seized by the authorities.

Mr V. Tanner, P.M., said that he was not satisfied that the apparatus was in Bleeck's possession for improper purposes.

Figure 3: **Weekly Times**, Melbourne, 3 April 1915.

of view. With an efficient aerial the instrument could tap messages from a distance of several hundreds of miles. A crystal could be purchased for threepence.

Will's solicitor said that as a result of statements that appeared in the press he had been ostracised

by his friends and relatives. He had been practically condemned without a trial.

The magistrate said that the defendant had undoubtedly committed a breach of the Act but he was not satisfied that it was for any improper purpose. As a wireless experimenter he would need such an instrument. An electrical engineer might have the apparatus in his possession in all innocence.

It seemed hardly fair to raise the question of German origin for it had nothing whatever to do with the case.

The magistrate said the offence was really only a small matter but a penalty had to be inflicted. He fined Will £1 with £2/2/- costs.

No one in the family today can remember anything about the equipment ever being returned at any time.

In retrospect, it would seem that Will was seeking to devise an RF oscillator more stabilised than Marconi instruments by using the constant output of his battery invention.



## WIA news in your inbox

The Wireless Institute of Australia has news releases on its website. Periodically, these are summarised for members and sent to their [callsign@wia.org.au](mailto:callsign@wia.org.au) address.

Do you have a [callsign@wia.org.au](mailto:callsign@wia.org.au) email address? They are available free to all members,

With a [callsign@wia.org.au](mailto:callsign@wia.org.au) email address, all emails sent to that address will automatically be forwarded to a home or work email account of your choice. The real benefit is you have a consistent email address, and should you ever change ISP, your friends and colleagues will continue to be able email you using your [callsign@wia.org.au](mailto:callsign@wia.org.au) email address.

To update your [callsign@wia.org.au](mailto:callsign@wia.org.au) address all you need to do is fill out the online form on the WIA website, in addition your new email address will also be updated in MEMNET.

Are you registered for MEMNET? It's easy, secure and gives you so much more; it's how the WIA sends out membership renewal notices and other important communications.

The WIA website address is [www.wia.org.au](http://www.wia.org.au)

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# WIA talks about amateur radio - past, present & future

Jim Linton VK3PC



Photo 1: An amateur radio operator and his gear in yesteryear.

The Wireless Institute of Australia (WIA) has responded to the invitation to discuss amateur radio with the broader engineering sector, through an article published in the Australian Journal of Telecommunications and the Digital Economy (AJTDE).

The report by WIA President, Phil Wait VK2ASD, *"Not Your Grandfathers Ham Radio"*, suggests that if you 'scratch' any older electronics or telecommunications professional there's a good chance you'll find an amateur radio operator.

AJTDE is a leading multi-disciplinary quarterly journal on telecommunications, the media and the digital economy, serving industry, academia and government.

It starts out to paint an outdated, but unfortunately often stereo-type picture of old amateur radio, a bit of its early history plus things we do now, and spells out what the WIA is trying to achieve in the near future.

## Satellites and space

The article discusses the beginnings of amateur radio satellites in Australia, the current practice and ambitions now in that field.

Photo 2: ARISS has sparked student interest for 15 years.



*"Some people are surprised to know that the International Space Station has a permanent amateur radio station," explained Phil VK2ASD.*

The International Space Station (ISS) continues to play an important role as it has over 15 years, with at least one of its crew on each mission holding an amateur radio licence.

During their spare time crew members delight in answering questions from students through the Amateur Radio on the International Space Station (ARISS) program. The ISS also has digitised packet facilities and video transmissions.

He said: *"The overall goal of ARISS is to get students interested in mathematics and science. To spark student interest .... and inspire the next generation of explorers."*

Teachers report that the exceptional experience of talking

with crew-members in space 'holds the power to inspire greatness' and 'launches dreams'.

## Doing more with less

The Journal article comprehensively talks about space communications in Australia and worldwide, then moves on to what many radio amateurs do on air today.

Phil said: *"They still simply talk over the radio, or participate in 'radio-sport' contests to see how many stations they can work in a set time, and a large number are now using the very latest technologies to communicate."*

*"Prolific among them is the development of new data compression techniques, allowing narrower signal bandwidths and far superior noise immunity."*

He explained that many now communicate reliably around the world using only flea power transmitters.

Or use low cost computers, like the Raspberry Pi, to extract information from signals way below the radio noise floor, something impossible only a few years ago.

Other radio amateurs are developing the hardware and software solutions for the new

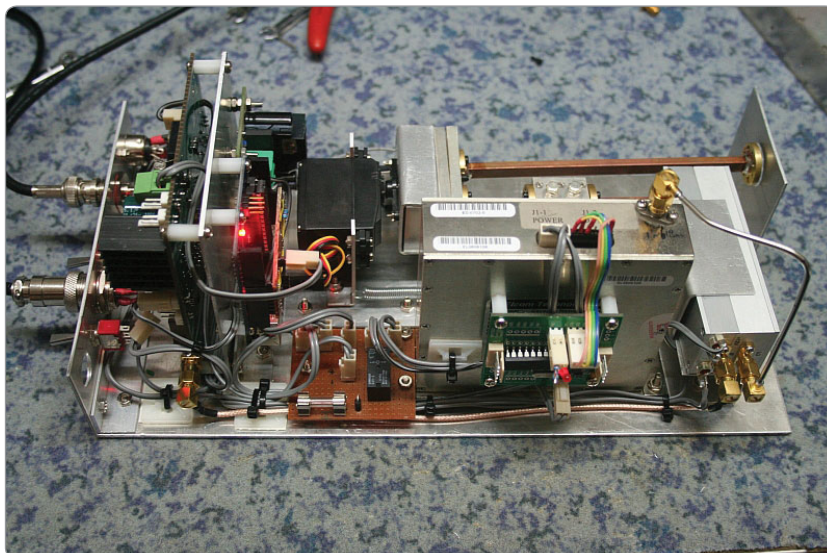


Photo 4: Do-It-Yourself microwave gear.

generation of software defined radios (SDRs) with functionality only limited by their imagination, and their nation's radio regulations, naturally.

*"One such development is the open source CODEC designed by Australian amateur David Rowe (VK5DGR), providing communications quality speech over narrowband/low bandwidth HF and VHF digital radios, and finding application in a number of diverse areas."*

*"So, amateur radio has come a long way in the last half-century. It's always been a hobby that just about anyone can get into on a modest budget, and it now caters for a very wide variety of interests indeed."*

*"In the age of Facebook and Twitter, it provides an opportunity to learn how communications technologies actually work, and takes followers beyond simply being consumers of packaged technology, into a much more interesting and challenging sphere,"* said Phil VK2ASD.

It can be combined with many other interests, such as ballooning, orienteering, yachting, four-wheel driving or rocketry, and it might even lead into a lifelong career in science and technology.

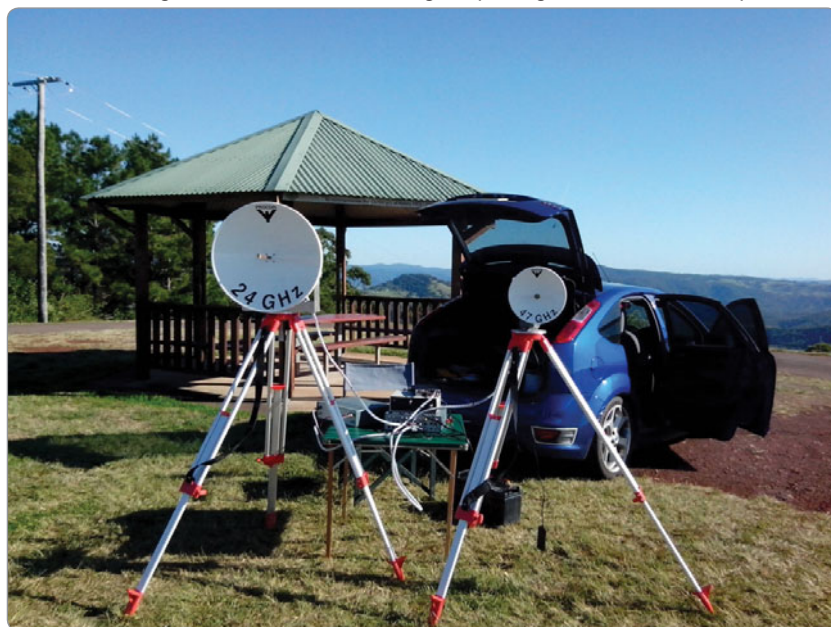
## WIA – the primary roles

The representative body for amateur radio in Australia is the Wireless Institute of Australia founded in 1910.

AJTDE readers are told that the WIA has the key role in providing training and licence assessment services for those interested in obtaining their amateur licence, particularly young people.

WIA appointees participate in the work of spectrum management, consultative and standards bodies, the Australian Radio Study Groups

Photo 3: Getting that extra distance through exploring microwave techniques.





in preparatory work for World Radio Conferences (WRCs) held by the International Telecommunication Union (ITU), in Australian delegations to WRCs, and on the Radiocommunications Consultative Council in Australia.

It is an active member of the International Amateur Radio Union, which represents the interests of the amateur and amateur satellite services internationally and recognised by the ITU.

There are over three million Amateur Radio operators worldwide, with over 1.2 million in Japan, over 700,000 in the USA, and about 14,000 in Australia.

### Advocacy to protect and further enhance

Access to the radio spectrum is vital for amateur radio, and its global allocations spread in bands from 136 kHz right through to 300 GHz and above.

There are exclusive amateur allocations, while some bands are shared with other radio services. Phil VK2ASD said VHF and UHF spectrum used by radio amateurs is coming under increasing pressure from existing and emerging telecommunications and entertainment services.

### Domestic regulation change sought



The Australian Communications and Media Authority (ACMA) regulates the amateur services through the Amateur Licence Conditions Determination (the LCD). That document specifies the operating conditions, frequency bands, permitted power, bandwidth,

methods of station control, and many other conditions.

The AJTDE article reviews the three licence grades - the Foundation licence or an entry level, the Standard or middle level, and the Advanced which is the top grade. Each has a separate LCD and relative demonstrations of knowledge through WIA assessment.

The Foundation licence is easily achievable with a little study and passing a multiple choice exam along with a practical assessment. Standard and Advanced licensees have access to more frequency bands, digital and image modes, and higher permitted power, up to 400 watts peak for Advanced licensees.

The Foundation licence in Australia, introduced 10 years ago, has largely offset a natural decline in the number of radio amateurs.

There are about 14,000 radio amateurs, currently 17% have a Foundation licence, 14% hold a Standard and about 69% have reached the Advanced grade. It is expected that many Foundation licence holders will move up to higher grades to continue the growth.

### Need for new regulatory regime

Amateur Radio is adopting new wireless communications technologies and moves into increasingly diverse applications, such as spread spectrum on HF frequencies, very narrow band digital audio techniques, digital television, Software Defined Radio, remote control and telemetry applications.

*"It is rapidly running up against the constraints of the (ACMA) regulation,"* said Phil VK2ASD.

*"While the current LCD was demonstrably an advance on its predecessors and generally served the amateur community well during a period of regulatory flux, it is now rather prescriptive and insufficiently flexible in many areas to*

*accommodate emerging technology adaptations."*

*"This is especially true of the Foundation licence. Although its intended purpose was to improve the attractiveness and accessibility of the hobby, and attract young people with a technical interest, it offers little scope for experimentation."*

He said regulation was a barrier for the new technologies that are likely to attract young people.

The WIA has also found ambiguities and disparities in relation to the type of equipment that radio amateurs can possess and operate, including the remote control of amateur stations and connection of amateur stations to the Internet.

The WIA has recommended that Foundation licensees be permitted to: transmit digital voice, data and images; connect computers to a transmitter; build transmitters from commercially available kit sets; use commercial transceivers which have been modified to transmit on the amateur bands; use unattended and remote control of a transmitter; operate through gateways connected to Internet connected repeater networks; have access to additional frequency bands; and use a maximum output power of 25 Watts peak.

The WIA also recommended that the Standard and Advanced grades should have access to more frequency bands and be allowed to transmit higher power levels.

*"Even our closest neighbour, New Zealand, allows its radio amateurs to transmit 1000 watts peak, more than twice the maximum allowed in Australia."*

*"The WIA's proposed changes to the Amateur LCD are intended to both make the hobby more relevant to newcomers, and also to bring the privileges of higher licence grades into line with other similarly developed nations,"* said Phil VK2ASD.

Due to the scope of the WIA's recommendations and the fact that



the Commonwealth legislation for Amateur Radio was due to “sunset” on 1 October 2015, and had to be “remade” quickly, the ACMA chose, through time necessity, to only make minor amendments at the time.

The WIA anticipates that the ACMA will embark on a public consultation process in response to the WIA’s recommendations, and expects further changes to the amateur LCD will be made.

The WIA notes that spectrum usage by radio amateurs holds the potential for greater public benefit, especially for non-commercial educational and pure research purposes that might enable innovative developments, while still allowing traditional Amateur Radio activities.

*(This is not the only part of the reform process. See the “The WIA navigates ‘Perfect Storm’ in the spectrum”, page 61, in the December 2015 edition of the WIA journal, Amateur Radio magazine)*

### Changes, responses and opportunities

The AJTDE article on amateur radio shows how it has changed significantly over its long history, and now presents a very wide range of opportunities and experiences.

The WIA believes that amateur radio has an “imputed” public value which cannot easily be measured. There is an opportunity to increase this public value by encouraging the use of amateur radio spectrum for non-profit educational and research purposes, naturally with

the appropriate safeguards to avoid unwanted interference to other licensees.

The WIA, as the representative body for amateur radio, is highly engaged with its members and committed to the Commonwealth’s Spectrum Policy and Management Framework Review.

The WIA believes there is a window of opportunity for the amateur service to take greater responsibility in the management of amateur radio, through self-determination and self-regulation, possibly including the development of an Industry Code.

The WIA is keen to take up that challenge on behalf of all Australian radio amateurs.



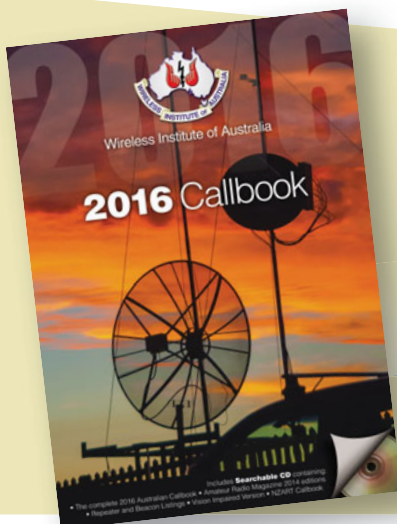
## Hamads

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Kenwood TL922 1,250W PEP linear amplifier, serial number 4060001. Mint condition. Two new 3-500Z output tubes. Included are user manual and technician’s log detailing important retro upgrades that have been installed. These include “step-start” protection, cathode current reduction to comply with manufacturer’s specifications and extending tube life, and upgrading the anodes’ anti-parasitic chokes. Inspection and demonstration welcomed. Pick-up essential. \$1,475. Please contact John VK6AU at [asali2@westnet.com.au](mailto:asali2@westnet.com.au) QTHR, Phone 08 92917908.

### FOR SALE – VIC

‘YouKits’ FG-01, 1-60MHz Antenna Analyser. Comes with lithium battery and charger. Can be powered by external DC supply. Suitable for QRP & SOTA. As new condition. \$300 Alex Stirkul, VK3AMX, QTHR Bulleen, Melbourne. Telephone 03 9850 7493 Email: [alexstirkul@yahoo.com.au](mailto:alexstirkul@yahoo.com.au)



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## Contributions to *Amateur Radio*

AR is a forum for WIA members' amateur radio experiments, experiences, opinions and news.

Your contribution and feedback is welcomed.

Guidelines for contributors can be found in the AR section of the WIA website, at <http://www.wia.org.au/members/armag/contributing/>

Email the Editor:  
[editor@wia.org.au](mailto:editor@wia.org.au)

## About Hamads

- Submit by **email (MUCH PREFERRED)** or if written and mailed please print carefully and clearly, use upper AND lower case.
- Deceased estates Hamads will be published in full, even if some items are not radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from those who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising on these pages Contact [admanager@wia.org.au](mailto:admanager@wia.org.au)
- Copy to be received by the deadlines on page 1 of each issue of Amateur Radio.
- Separate forms for For Sale and Wanted items. Include name, address STD telephone number and WIA membership number.

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# WIA Functional Committees

The WIA is a membership organisation with a very wide range of complex functions and member services. Core functions and services are administrative in nature (general administrative functions, membership services, examination and callsign management, financial etc...) and are performed by salaried staff.

Volunteers perform a diverse range of highly specialist functions (ACMA liaison, Frequency Co-ordination, Standards liaison, Interference issues, technical support and training and assessment etc.). These volunteers provide the majority of member services, however they have been loosely organised and often overstretched.

The new committee system attempts to structure the WIA's non-core activities into 10 broad functional areas, each comprising a team of volunteers under the direction of the WIA Board. This structure is intended to spread the workload on our volunteers, improve communications between members and the WIA Board, improve services to members, and encourage more people to become involved in the WIA.

## WIA Committee Charters

### Spectrum Committee

(Regulatory, ACMA, ITU, IARU, Repeaters & Beacons, Standards, Interference & EME, Monitoring Service)

Andrew VK4QF, Brian VK3MI, Dale VK1DSH, Gilbert VK1GH, Jim VK3PC, Noel VK3NH, Peter VK3APO, Peter VK3MV, Phil VK2ASD, Richard VK2AAH, Rob VK1KRM, Roger VK2ZRH, Ron VK3AFW.

- Perform all ITU and IARU liaison activities.
- Liaise with, and act as the 1st point of contact for, the ACMA.
- Advise the Board, and enact Board policy in relation to all radio communications regulatory issues and the LCD.
- Represent the WIA to State and Local Government
- Represent the WIA to Standards Australia
- Provide specialist technical advice and coordinate repeater and beacon licence applications and frequency allocation.
- Develop responses to significant and prolonged harmful interference issues affecting amateur radio operations.
- Provide an information resource for EMC/EMR issues.
- Administer the IARU Monitoring Service in Australia
- Provide a technical resource to other committees and the WIA Office.

### Technical Advisory sub-Committee (Tech support, Band plans etc.)

Amanda VK1WX, Barry VK2AAB, Bill VK4XZ, Doug VK3UM, Eddie VK6ZSE, John VK3KM (Co-ordinator), Paul VK2TXT, Pau VK5BX, Peter VK3APO, Peter VK3BFG, Peter VK3JFK, Peter VK3PF, Rex VK7MO, Tim VK2ZTM, Walter VK6KZ

### General Committee

Executive Administrator TBA, President (Phil, VK2ASD), Vice President (Fred, VK3DAC), Treasurer (Chris, VK3QB), WIA Secretary (David, VK3RU)

- Responsible for the efficient and correct operation of the WIA office.

- Responsible for staffing and workplace safety.
- Provide a specialist administrative resource to the WIA office as required.
- Manage contractual agreements.
- Manage business relationships.
- Ensure compliance with the ACMA Business Rules
- Prepare yearly budgets
- Prepare quarterly financial reports for the Board
- Prepare independently reviewed YE financial reports and balance sheets for circulation to the membership prior to each Annual General Meeting.
- Manage insurances and to be responsible for currency of insurance policies.
- Maintain a complaints register.
- Ensure complaints are handled in accordance with WIA policy and any contractual agreements.

### Communications, Media and Events Committee

Jim VK3PC, Phil VK2ASD, Robert VK3DN, Roger VK2ZRH

- Communication with members and the public:
- Communicate with the membership.
- Publicise WIA activities and initiatives.
- Develop strategies and resources for the promotion of Amateur radio to the public.
- Develop strategies and resources for the promotion of WIA membership to the Amateur community.
- Supervise and/or perform promotional activities.
- Co-ordinate the yearly AGM activities

### Education Committee

Fred VK3DAC, Ron VK2DQ, WIA Executive Administrator TBA

- In association with the WIA's RTO and affiliated clubs offering training services, develop and administer the WIA's training and assessment systems.
- In association with the Spectrum Strategy Committee, develop and maintain the various licence syllabi and associated question banks.
- In association with the Community Support Committee and the RTO, develop and maintain the Emergency Communications Operator scheme.
- Ensure the confidentiality and security of all personal information, question banks and examination papers.

### Grants Committee

Drew VK3XU, Gary VK2KYP, Peter VK3PF (Coordinator), Peter VK3PH, Scott VK3CZ

### Radio Activities Committee

WIA Director TBA

### Contests sub-Committee

Alan VK4SN, Colin VK5DK, Denis VK4AE / VK3ZUX, James Fleming VK4TJF, John VK3KM, Kevin VK4UH, Tony VK3TZ

### Operating Awards sub-Committee

Bob VK3SX (Coordinator), Alan VK2CA, Alek VK6APK, David VK3EW, Laurie VK7ZE, Marc VK3OHM, Paul VK5PAS

### ARDF

Jack VK3WWW (Co-ordinator)

### ARISS

Tony VK5ZAI (Co-ordinator)

- All activities associated with actual radio operation, such as: contests, awards, distance records, QSL services, ARISS, AMSAT, ARDF etc.

### QSL Card sub-Committee

Alek VK6APK, Alex VK2ZM (Outwards Manager), John VK1CJ, John VK7RT, June VK4SJ, Max VK3WT, Stephan VK5RZ, WIA Office (Inwards Manager)

### Historical and Archive Committee

David VK3ADW, Drew VK3XU, Ian VK3IFM, Jenny VK3WQ, Linda VK7QP, Martin VK7GN, Peter VK3RV (Coordinator), Will VK6UU

- Develop, maintain and preserve the WIA's historical and archive collection
- Encourage access to the collection by WIA members and those seeking historical material for publication.

### IT Services

Robert VK3DN, Marc Hillman VK3OHM, Tim VK3KTB

- Provide an IT resource to other committees and the WIA Board.
- Be responsible for the off-site data back-up of all IT systems information.
- To update and maintain the WIA website as required.
- Advise the Administrative / Financial committee in relation to the MEMNET Cloud Service contract.

### Community Service Committee

Fred VK3DAC (Director), Greg VK2SM (Assistant Treasurer), Ewan VK4ERM (Director), Paul VK5PH

- Develop, promote and co-ordinate all WIA community support activities

### New Initiatives

Phil VK2ASD (Director), Robert VK3DN (Director), Roger VK2ZRH (Director), David VK3RU (Company Secretary)

- Think-tank ideas and initiatives to advance amateur radio and WIA membership.
- On approval by the Board, run proof of concept trials.

### Affiliated Clubs Committee

Ted Thrift VK2ARA, President (Phil Wait VK2ASD), Vice President (Fred VK3DAC)

- Manage all arrangements between the WIA and WIA Affiliated Clubs
- In cooperation with the Administrative / Financial committee, manage the Club Insurance Scheme
- Encourage stronger relationships and communications flow between the WIA and WIA Affiliated Clubs
- Encourage increasing WIA membership ratios in Affiliated Clubs
- Manage the Club Grants Scheme
- Identify and bring regional Affiliated Club issues to the attention of the WIA Board.





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